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GLEANINGS

A JOURNAL DEVOTED
TO BEES AND HONEY
AND HOME INTERESTS.

BEE CULTURE

ILLUSTRATED
SEMI-MONTHLY
Published by THE A. F. ROOPE CO.
\$1.00 PER YEAR MEDINA, OHIO

Vol. XXIV.

DEC. 1, 1896.

No. 23.

STRAY STRAWS

FROM DR. C. C. MILLER.

A CHINAMAN seems to be setting type on GLEANINGS. Page 834 he has "wagon-load" for "wagon-road." Chinaman make velly good plinter.

I'M RATHER INCLINED to favor light-weight sections, providing they're made so light that by no possibility can a dishonest grocer sell one of them for a pound.

YOU OBJECTED, Mr. Editor, to my trying only one colony of bees out of doors last winter. This winter I'm trying ten packed the same way. Will that suit you better? [That is better, doctor.—ED.]

MY PUNICS (half-bloods) did a good deal better than reported at Lincoln, for at that time No. 2 had a lot of honey that I didn't know of. I think 300 lbs. is below the mark, besides abundance for winter.

I WAS LATE getting some of my lighter colonies filled up for winter; and after I used up all sealed combs of honey I gave the rest sections. Extravagant, perhaps, but I didn't want to risk feeding syrup in November.

APIS DORSATA, shall government import them? is asked in *American Bee Journal*. Replies are more than three to one against it. Rev. M. Mahin says, "If they are capable of domestication the people of India would have domesticated them long ago."

READING PAGE 130 makes one feel rather sad to think that by any possibility could there be any need to advise the securing of a good wife or husband. Something wrong when young people think they can't afford to marry. They can't afford to remain single.

I'VE ALWAYS WANTED to have our central organization include Canada as well as United States, although strangely enough some accused me of wanting to drive out Canadians. But if more can be accomplished by having the organization national I give up. Just now the

most important thing seems to be to make a lively chase after adulterators and swindlers.

A REPORT in *American Bee Journal* sounds like old times. L. R. Lighton averaged 120 lbs. extracted honey from each of his 15 colonies, and sold at 20 cts. a pound. That makes \$24 per colony, or \$360 for the 15. He keeps bees mainly for recreation. Wonder what he'd report if he kept them for profit.

HON. R. L. TAYLOR might well take up the question, "How long from the laying of the egg to the perfect queen?" It's hardly safe to average 17 with 15 days, for the 17 was an error of 35 years ago that I think no one holds now. The error probably arose from considering the work of weak nuclei, and the right thing, no doubt, is the development of a queen normally in a full colony.

NOW I'M MAD. You say, Mr. Editor, p. 820, that I have no credit for originality as to wood splints in foundation. If you ever want me to speak to you again, just change that "originality" to "priority," unless you can show the place I copied from. But friend Averill beats me in getting the bees to respect unwaxed sticks. [I beg pardon. I will change it to "priority" in all the journals I have sent out. That is easily done.—ED.]

WHAT'S THE GOOD of unloading the hives from friend Mendleson's wagons, on p. 817?—might just let the apiary stand on the wagon till time to move again, as photographers do with their wagons—not exactly a floating apiary, but a sitting apiary. [Yes, a wagon could be arranged so as not to make it necessary to unload the bees at all; but one large enough to take a whole apiary like friend Mendleson's would make it a little difficult to get at the lower tier of hives for putting in the boxes.—ED.]

R. WILKIN writes he has fed $3\frac{1}{2}$ tons of sugar and 1 ton of honey this fall by pouring in at entrance, and likes the plan. For each pound of sugar he uses half a pound of water. He says too hot or too thick syrup will kill bees. I fed it thick. Likely that's why it killed them. He

pours syrup in through curved, flat-ended funnel, feeding 500 pounds in two hours, giving each colony 5 to 15 pounds each evening. [I should hardly like to feed $3\frac{1}{2}$ tons of sugar and one ton of honey on the bottom-boards of the hives of an ordinary apiary. Too many of them, I fear, would leak, and make this method of feeding rather expensive.—Ed.]

I DON'T KNOW whether there was any design in putting so close together those two items on page 833, but I couldn't help thinking if some of those who sigh for the "good old times" were to spend just one week in hot weather without fly-screens, as in the "good old times," they'd be glad to get back to the present. Our arms don't get tired now keeping a fly-brush going all the meal-time to keep the flies off the table.

PERHAPS it might not be safe to put 15 ounces as the approximate weight of $1\frac{1}{2}$ sections (page 811). Next year the weight may be nearer 13, and I think some have reported 13 as the average weight. [Let us see, doctor: I believe you said you preferred $1\frac{1}{2}$ sections because they averaged a pound; that is, a crate of 24 such sections would have a net weight of 24 lbs. If this is true, the $1\frac{1}{2}$ -inch would average very near 15 ounces; but is it true that there is so great a difference in different years? Let's have an expression from our readers.—Ed.]

WHAT A BUSINESS—yes, what a science—advertising has become. I went with friend York to a banquet given by an advertising agency, the Frank B. White Co., to advertisers and publishers for mutual consultation. I was glad to see a grand supper could be given without wine; but A. I. Root wouldn't have liked so much cigar smoke. [Yes, indeed, advertising, in this country at least, has come to be a real science. The advertiser who knows how and when to cast his bread upon the waters is pretty sure to get it back again many fold. The purpose of these conventions is to learn both the *how* and *when*. I presume we as a bee-keeping firm spend thousands of dollars more in advertising than any other concern engaged in the manufacture of bee-keepers' supplies; and our position as manufacturers is due largely to our faith in advertising; advertising first, last, and all the time. "Keeping everlastingly at it" is one of the accepted mottoes among advertisers who get their money back.—Ed.]

SAY, MR. EDITOR, don't let's get into a quarrel from a misunderstanding. On p. 812 you reply that you've seen queen-cells right over eggs, and you think the colony had been queenless some time before the eggs were given. That doesn't conflict in the least with my statement, "Unqueen a colony and the bees will start a queen from a larva, never from an egg." Did you ever know a queen to be started from an egg on the removal of a queen, assuming that the removed queen left larvæ and eggs? [No, I

never knew a queen to be started from an egg on the removal of the queen, *provided* there were *larvæ* as well as eggs in the comb. But your statement, it seemed to me (and does so yet) is a little strong when you say that the bees will *never* start a queen from an egg. The sentence in question contains no proviso to the effect that there may be larvæ or eggs. Some years ago, when I was rearing queens, those that sold for a dollar, it sometimes became necessary, under pressure of orders, to remove a queen after she had laid a few eggs. Well, under such circumstances, if I am not mistaken, I have seen the bees, in their eager haste, start cells right over the eggs. They just could not wait for them to hatch into larvæ.—Ed.]



POISONOUS HONEY.

DR. STELL'S CONCLUSIONS DISSECTED.

By E. S. Arwine.

ANENT the poison-honey question referred to in the Oct. 15th issue, page 757, where you reproduce Dr. Stell's article in *Southland Queen*, which gives the usual symptoms of laurel poisoning, but which has no bearing on the theory of the secretion of poisonous honey by the laurel flowers, I would say: The leaves of mountain laurel (*Kalmia latifolia*) are well known to be poisonous to man, sheep, and some other animals, but are not poisonous to deer, goats, quail, etc. Why this is so I am unable to state, neither have I ever heard a reason given. May it not be that laurel is poisonous to gall-secreting animals, while non-gall-secreting ones may eat it with impunity? Deer have no gall-producing glands in their liver. I have never examined a goat's liver. If Dr. Stell had used nux vomica instead of laurel leaves, he would have had strychnine instead of laurel poisoning, and would have proven as much; that is, honey can be poisoned; but the secretion of poisonous honey is a different thing. I think his poisoned honey would have killed bees had he confined them to it.

Poison in the honey-sac of bees (unless very concentrated) would not affect them in the short time required to load up, carry to, and deposit in the hive, as very little if any absorption takes place through the walls of their honey-sacs. As Dr. Stell used a tincture of the leaves, and not honey from the laurel flowers, his experiment proves nothing as to the secretion of poisonous honey.

There are but two avenues open to us to reach a conclusion in this question; namely, analogical reasoning and actual experience. Analogy

will carry us into the physiology (or, rather, botanology, if you will allow me to coin a word) of plant life. In this line we find various organs performing the functions necessary to growth, maintenance, and reproduction of plant life. The absorbing cells gather material from earth and air, and discharge it into the fluid circulating in the interstices of the plant, and is carried by the vital forces to every part of the plant, each organ selecting from this fluid such part of it as it can use in fulfilling its functions. This fluid is apparently limpid, yet in most plants it contains a minute portion of coloring-matter, probably dissolved from the plant tissues. Some of this coloring-material is separated with the honey in some plants, and in others is either entirely absent or is not carried off by the nectaries; therefore we find some red, pink, purple, and other-colored flowers furnish a water-white honey, and some white flowers produce an amber honey. This coloring-matter, not being volatile, deepens as the honey ripens; hence the various shades of honey. Sometimes these shades vary in different years, and at different periods of the same year, in the same species of plants, depending, probably, upon meteorological conditions. But the colors of flowers are probably always produced by the action of the cells in their petals, assisted by the action of light; hence nature produces variegated and solid-colored flowers. Is it not probable—yea, almost certain—that the poison in most poisonous plants is produced by the gland-cells in the parts where found, these cells taking atom by atom, and building therefrom poison molecules which remain in the tissues where produced? If this theory is correct, then flowers probably never secrete poison; for to do so they would have to possess poison-producing glands. The rattler secretes poison only at the base of the fangs; but if the poison in poisonous plants is produced in their general structure, and circulates with the circulating fluid, then some of that poison might be separated with the nectar. This I have never verified; but the poisonous spores in the poison oak are in the juice of the plant, both in leaves, bark, and wood; nevertheless, bees gather pollen and a reddish pleasant healthful honey (sometimes quite abundantly) from the greenish flowers of that shrub. These spores of the poison oak attack the skin of many people, causing erysipelatous inflammation, which frequently extends to the subcutaneous areolar tissue, while other persons have complete immunity, even though they handle the broken plant with abrasions and sores on the hands.

From this observation I am inclined to the opinion that the nectaries never separate the poison of plants with the honey they produce; therefore we are inclined to think that the few cases reported from the South, of poisoning, believed to be from the honey of the yellow jas-

mine (*Gelsemium sempervirens*), were really from some other source that had been overlooked, and that the honey of the jasmine, both white and yellow, is free from poison, especially as the poison of the plant is found principally in the root. If honey is ever poisonous we must reach that conclusion, or, rather, demonstration, from cases where all possible source of contamination from extraneous sources is rigidly excluded. If poison honey is gathered from the jasmine or any other plant, we should probably have several cases almost every year, instead of the very few cases, especially as the jasmine abounds in the South, and is a great bloomer, and is quite a regular yielder of honey so far as I have been able to learn.

Before leaving this subject I will remark that the odors of flowers are produced by odoriferous cells (or glands if you prefer that term) situated in the flowers. The hard maple, which furnishes much saccharine material in the winter and early-spring sap, produces very little honey, so that, where sugar is bountiful in sap or juice of a plant, it does not follow that such plants yield honey freely; but the tulip, which has little or no sugar in the sap, yields honey bountifully.

Dove, San Luis Obispo Co., Cal.

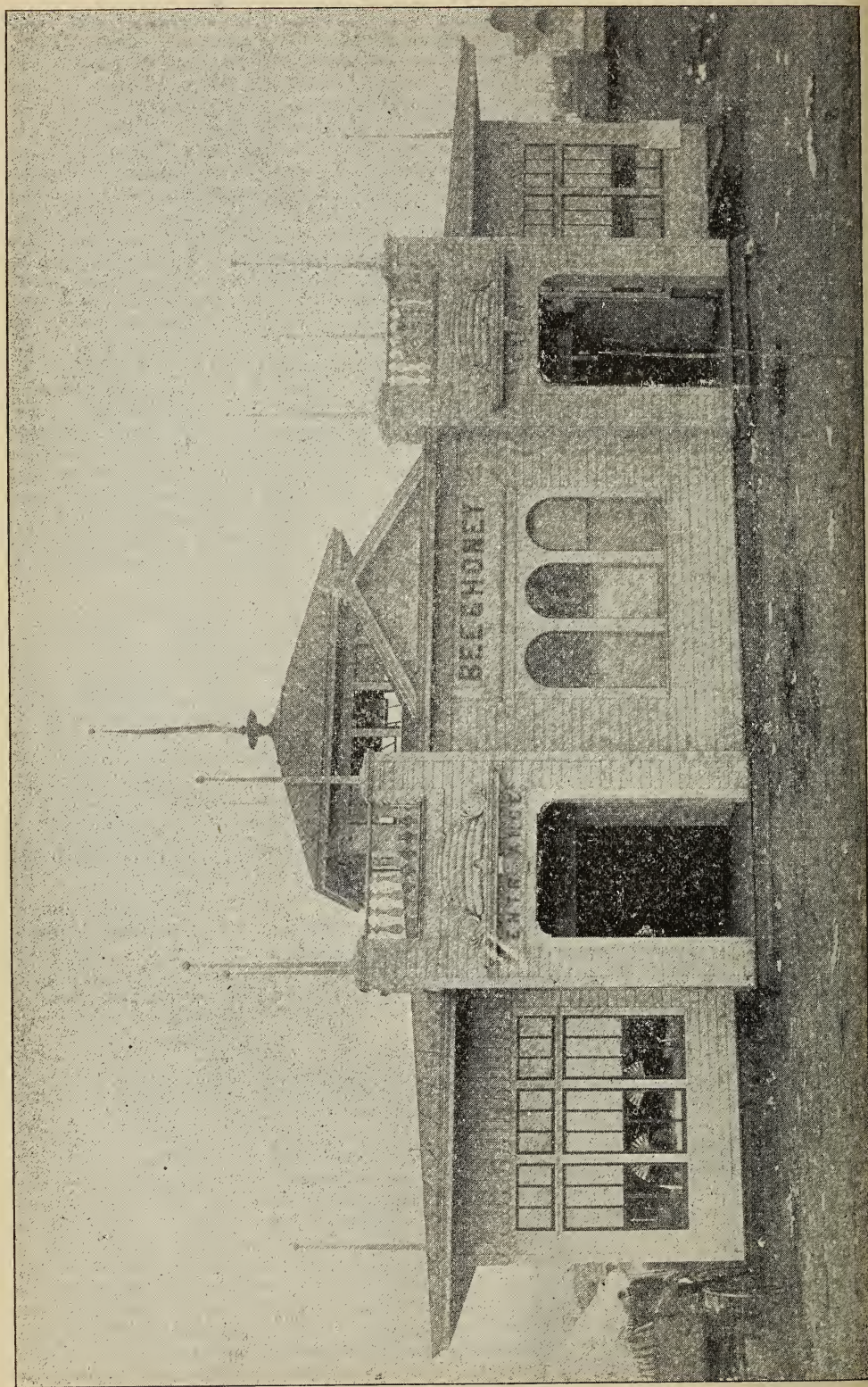
[On page 820 you will find an article supporting your position, and a footnote defending Dr. Stell. The missing link seems to be that the doctor does not necessarily prove that plant *juices* have the same character as the plant *nectar*. If we take into consideration that the nectar of the onion flower has the same general flavor as the juices of the onion-plant itself, we have an analogy that would go to show that the nectar from a poisonous plant might be and probably would be poisonous, the same as the juices of that plant; but, as I said in the footnote to which I have already referred, the poison in the nectar would probably be much more mild.—ED.]

THE NEBRASKA BEE AND HONEY HOUSE.

HOW TO EDUCATE THE GENERAL PUBLIC REGARDING THE BEE AND HONEY INDUSTRY;
AN OFFICIAL TRADE MARK FOR PURE
EXTRACTED HONEY, ETC.

By E. Kretschmer.

The foregoing illustration gives some idea of the push and energy of our Nebraska brethren for apicultural industry, erected on the State Fairgrounds near Omaha, during the year 1895. It, no doubt, is the most complete structure devoted *exclusively* to the exhibition of bee-supplies, bees, and their product. The building is a substantial frame structure, measuring, as you view the illustration, 64 feet from left to right, and 50 feet wide at each end, while the central portion projects over six feet further to the front, and the two doors are covered with a so-called "lobby," surmounted with tower-shaped framework, ornamented with balustrades and flag-staffs, while immediately



THE NEBRASKA BEE AND HONEY HOUSE, ON STATE FAIRGROUNDS, NEAR OMAHA.

over the entrance, resting on a neatly molded lintel, may be seen an imitation of the old-fashioned German straw hive. The iron-covered roof has a dome-shaped center, supplied with swinging windows, admitting central light and ample ventilation; and over this rises a neat flag-staff, somewhat longer than the others, from which floats "Old Glory."

The inside is floored with yellow pine; the side windows are large, and so arranged as to show the exhibits to the best advantage—the glass being stained or coated white to check the effect of the direct rays of the sun. Around the sides are placed long tables or shelves on which to place the exhibits, with closet room underneath to safely keep cases, crates, boxes, etc.; a railing, placed at a suitable distance from said tables, prevents visitors from crowding each other against the exhibits; some of the honey and wax exhibits during the last fair were nearly ten feet high, and crowding against it might have caused considerable damage.

Seats are placed in various parts of the building, where the weary visitor may find rest, or refresh himself at the fountain of pure water just outside of the door.

In the center of the room stands a large glass case for the exhibit of honey and waxwork. This case is of the same size and shape as those used at the Columbian Exposition, in Chicago, in 1893, for the exhibit of honey and wax. This case, while it permits the exhibit of honey and wax in any manner, shape, or form, protects it against dust and damage resulting from handling by visitors. Next to this case a space is set apart for the purpose of practical demonstration of the manner of extracting honey; here our city friends are informed by lectures and ocular demonstration that extracted honey is nature's own pure sweet—clean, bright, and pure.

The central portion of the front side of the building, just under the words "Bees and Honey," is set apart as the superintendent's office, separately inclosed, and furnished with table, chairs, etc., and here the exhibitor may at any time, prior to the opening day, make his entries and receive his entry-cards, correctly entered by a practical bee-keeper familiar with apicultural phrases, avoiding the necessity of going to a remote part of the grounds, and then stand in line before the entry clerk in the secretary's office, awaiting your turn to make your entries.

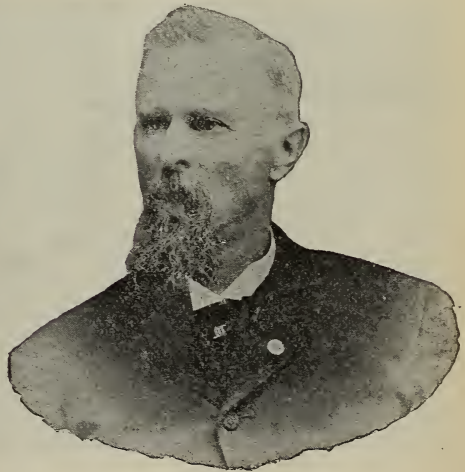
While we admire this magnificent building wherein to exhibit the "little busy bees" and the result of their labor, we can not refrain from mentioning that this building is due to a great extent to the untiring energy of Hon. E. Whitcomb, for over ten years the president of the Nebraska Bee-keepers' Association, and to his able assistant Mr. L. D. Stilson, editor of

the *Nebraska Bee-keeper*, and secretary of the Nebraska Bee-keepers' Association.

Mr. Whitcomb has been the superintendent of the bee and honey department of the Nebraska State Fair for 12 years; and the writer well remembers the remarks he made when, with his own hands, he set some posts in the ground and nailed on some boards, for the first separate shelter for the bee and honey exhibit. He said: "We will have something better." His extensive acquaintance with nearly all the State officers, as well as the officers of the Fair Association; his zeal for bee culture in Nebraska, his indomitable determination, bordering on to obstinate tenacity that would not take "no" for an answer, has been the foundation, cornerstone, and superstructure of this building, to which every Nebraska bee-keeper—yes, every lover of the busy bee—may point with pride.

Red Oak, Iowa, Oct. 19.

[Nov. 1st, p. 789. I stated in the biographical sketch that the Hon. E. Whitcomb was a man of influence, and that he had a way of asking, and receiving what he asked for. No doubt the credit for this magnificent bee and honey building—probably the largest and finest of any thing of the kind in the world—is due to the indomitable zeal of E. Whitcomb. Another bee keeper who has no small influence in the State is Mr. L. D. Stilson, the editor of the *Nebraska Bee-keeper*. Having introduced to you in our Nov. 1st issue Mr. Whitcomb, I now take pleasure in introducing to you Mr. Stilson.



L. D. STILSON.

Nebraska is fortunate in having two such able men as the exponents of bee culture—the one the president and the other the secretary of the State Bee-keepers' Association. They have long held these positions, and I trust they may continue to hold them, for they are certainly the right men in the right place. The way they are building up the industry in the State, and the way they are advertising the products of the hive, is evidenced in part by this magnificent honey-building. I said Nebraska beekeepers have set a "terrific pace" in the man-

ner in which they extended hospitality to the bee keepers at the Lincoln convention. They have set another pace for other States to follow in the erection of a suitable honey-building. I believe that we as bee-keepers scarcely realize the very great importance of having our industry properly shown up at the State fairs.—Ed.]

FOUL BROOD.

THE APPEARANCE OF THE AFFECTED COMB AND THE APPEARANCE OF THE DISEASE IN THE MICROSCOPE.

[A pamphlet, "Foul Brood and its Treatment," has recently been issued from the pen of Thos. Wm. Cowan, editor of the *British Bee Journal*, and author of other works on the subject of bees. This little treatise begins by showing the importance of the industry of bee-keeping, and the valuable service performed by the bees in the fertilization of fruit-bloom. The author then draws attention to the one great pest of bees—foul brood. After giving a historical retrospect, and the nature of the disease, he sets forth the life history, which I copy in full, as it shows what foul brood is and what it looks like—both the appearance of the comb having the disease, and the disease germs themselves, as viewed from the microscope. So far as I know, there has never yet been a photograph of a comb of foul brood, and I take pleasure in presenting one, copied from the work above mentioned. Mr. Cowan says:—Ed.]

LIFE HISTORY OF FOUL BROOD.

It will be necessary to give only a brief outline of the life history of *Bacillus alvei* to enable us to understand somewhat of the nature of this disease.

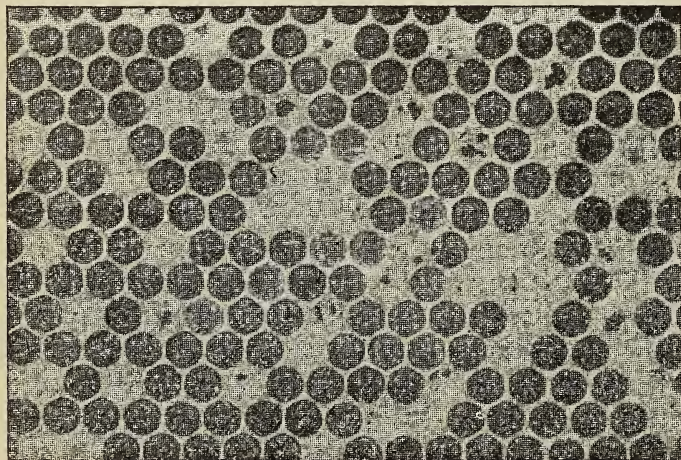


FIG. 1.—FOUL BROOD IN AN ADVANCED STAGE.

Bacillus alvei is a pathogenic or disease-producing micro-organism, in form cylindrical or rod-shaped, and increasing by splitting or fission. The rods increase in length without growing thicker, and at a certain point divide and separate in two, to again increase, divide, and separate. Sometimes, in suitable nourishing media, the lengthening of the rod is not accompanied by separation, but only by repeated division into longer or shorter chains of bacillus filaments, or leptothrix. The rods are also provided with a flagellum at one end, and are endowed with the power of locomotion. Under certain conditions bacilli have the power of forming spores, in which case a speck appears at a particu-

lar point of the bacillus, which gradually enlarges and develops into an oval highly refractive body, thicker but shorter than the original rod. The spore grows at the expense of the protoplasm of the cell, which in time disappears, setting free the spore. The latter formation closes the cycle of the life history of the bacillus. The spores—representing the seeds—retain the power of germinating into bacilli when introduced into a suitable nourishing medium, and at a proper temperature, even after the lapse of long periods of time. At germination the spore first loses its brilliancy, swells up, and eventually its membrane bursts in the middle. The inner part of the spore then projects through the opening, and grows to a new rod.

The spores also possess the power of enduring adverse influences of various kinds without injury to their vitality, so far as germinating is concerned, even if subjected to influences fatal to bacilli themselves. The latter are destroyed at the temperature of boiling water, while the spore apparently suffers no damage at that temperature. Freezing also kills the bacilli, but not the spores. In the same way chemical reagents, completely destructive of the bacilli, do not affect the vitality of the spores. Carbolic acid, phenol, thymol, salicylic acid, naphthol beta, perchloride of mercury, and many other substances, even when considerably diluted, prevent the growth of bacilli, but have no effect whatever upon the spores. The great resistance of spores to high and low temperatures, to acids and other substances, is due to their being encased within a thick double membrane.

There are certain chemical substances which evaporate at the ordinary temperature of the hive, and whose vapors, while not actually killing the bacilli, arrest their increase or growth. Among such substances are carbolic acid, phenyl (or eucolin), lysol, eucalyptus, camphor, naphthalene, and several others.

If a healthy larva be taken, and a small quantity of the juice from its body spread on a glass slide be placed under the microscope, we shall see a number of fat-globules and blood discs (Fig. 2), among which molecules are in constant motion. If, on the

other hand, a young larva diseased, but not yet dead, be treated as above, its juices will, when subjected to a similar examination, be seen to contain a great number of active rods swimming backward and forward among the blood-discs and fat globules, which latter, as will be noticed (Fig. 3), are fewer than those in the juices of a healthy larva. We shall also find, as the disease makes rapid progress, chains of bacilli—the leptothrix form—becoming common. In Fig. 4 we have a representation of a later stage of the disease when the larva is dead and decomposing. Here the fat and albuminoids will be found disappearing, and the bacilli assuming the spore condition. In Fig. 5 we see the disease in its latest stage, when the whole rotten mass has become coffee-colored, or has dried to a scale. Blood discs, fat-globules, and molecular

movements have disappeared, only a few bacilli are seen, and at last, as the nourishing material becomes exhausted, only spores remain.

It will now be understood that, owing to the great resistance of the spores, chemical substances have no effect at all upon them unless administered under such conditions as would destroy the bees. From this it will be seen how great is the difficulty in curing foul brood unless the disease is attacked in its early stages.

It is previously been stated that adult bees are sometimes attacked by the disease. To prove this, it is only necessary to take a weakly bee on the point of death, and examine what remains of its

fluids under the microscope, when a large number of active bacilli will be found. Such bees leave the hive to die, whereas the infected larvæ remain in the cells, unless disinfectants to arrest decomposition are used, in which case the bees remove them from the hives.

METHOD OF TREATMENT.

The superiority of the modern frame hive over the straw skep is here strikingly apparent. The latter was as a sealed book to its owner, who had no means of detecting the presence of foul brood except by outward signs, and these, as already pointed out, are only manifested when the disease is in its

color, we at once detect the first symptoms of foul brood. The further progress of the disease can, at this stage, be arrested by feeding the bees with syrup, to which three grains of naphthol beta are added to every pound of sugar used. This is employed by the nurse-bees in preparing food for the larvæ. We can further assist the bees by putting naphthalene or eucalyptus in the hive. The bees then usually remove the dead larvæ.

Apart, however, from experienced bee-keepers or trained experts, very few are fortunate enough to detect the disease at such an early stage, or to effect a cure so easily, and it becomes advisable to describe the method of procedure in ordinary cases—that is, when the combs have irregular patches of brood, with sunken and perforated cappings to the cells (Fig. 1) containing the coffee-colored mass inside.

If the colony be weak, destruction of bees, combs, frames, and quilts, together with thorough disinfection of hives, is by far the best course to pursue. We thus destroy the spores, and so remove the source of infection. If, on the contrary, the colony be still strong, the bees may be preserved by adopting the following method: An artificial swarm is made of the bees, which are then placed in a straw skep and fed on syrup medicated with naphthol beta. The frames, combs, and quilts are then burned. The hive is disinfected by being either steamed, or scrubbed with boiling water and soap, and then painted over with a solution of carbolic acid (one part of Calvert's No. 5 carbolic acid to two parts of water), and when the smell has disappeared it will be ready for use. The bees are allowed to remain in the skep for forty-eight hours, by which time the honey they may have taken with them, and which might contain spores, will have been consumed, and the diseased bees will have died off. They are then shaken from the skep into a clean frame hive furnished with six frames, fitted with full sheets of comb foundation, and are fed with medicated syrup for a few days longer. The skep used as their temporary home should be burned. All such work should be done in the evening, when the bees have ceased flying for the day, to avoid chance of robbing.

[A careful reading of the method of treatment as above will make it very apparent why we, in our large experience with foul brood, could not effect a *permanent* cure of the disease by the application of disinfectants in the form of carbolic acid, salicylic acid, and the like. While we could kill the bacilli themselves with the antiseptics we had no effect on the *spores*, which would hatch later, and, as a consequence, give rise to the disease again. We found it absolutely necessary to burn the combs, frames, and sometimes the hives, when it was not practicable to immerse them in boiling water.]

Mr. Cowan's statements, based on his investigation with one of the best microscopes, agree exactly with our quite extensive *experience* with foul brood some years ago.

The starvation plan, in connection with burning the combs and frames, and boiling the hives, has worked best—altogether the best—in treating foul brood. It never re-appeared after such treatment, though it did in all the cases where the hives were not boiled, thus confirming the theory or fact of the *spores*.—Ed.]

CRITICISM ON THE CONSTITUTION.

HOW THOS. G. NEWMAN REGARDS THE MATTER.

To the Officers and Members of the North American Bee-keepers' Association:—Having received a proof of the constitution of the proposed "United States Bee-keepers' Union," kindly sent me for criticism by the genial Secretary, Dr. A. B. Mason, with the request to have it submitted to the National Bee-keepers' Union

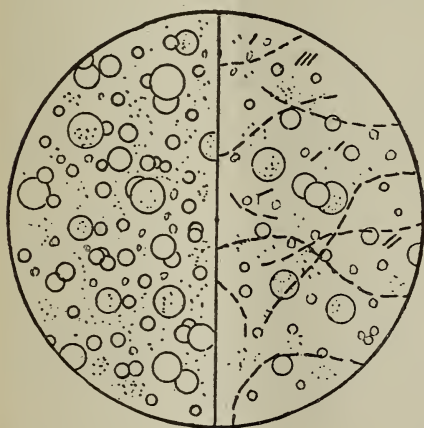


FIG. 2.—HEALTHY JUICES. FIG. 3.—EARLY STAGE.]

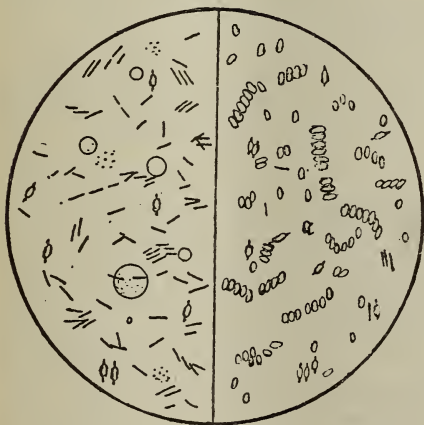


FIG. 4.—LATER STAGE. FIG. 5.—LAST STAGE.

last and most virulent stage, at which time any treatment short of total destruction is entirely hopeless. The owner of a movable-frame hive, on the contrary, can, by the facilities it affords for examining the combs, at once detect the disease in its earliest stages, and adopt measures for arresting its progress or for stamping it out altogether. Unfortunately the disease is seldom noticed on its first appearance; but it has nearly always to be dealt with when more or fewer spores are already in the hive.

If, on examining combs to all appearance healthy, with brood compact and larvæ bright and plump, we find here and there a cell with young larvæ moving uneasily, or extended horizontally instead of being curled up, and changing to a pale yellow

at the next election, I have carefully weighed each of its provisions, and will in all kindness and candor point out some of its incongruities, as well as lack of consistency and completeness.

If there is a successful "amalgamation," the new organization should have a constitution as near perfection as possible; and as I have been requested to criticise it, I do so cheerfully, and, with the best of intention, submit the following remarks:

Sec. 2 of Art. III. and Sec. 2 of Art. IV. are inappropriate in a constitution. They prescribe who shall be officers and members in the event of the adoption of the new constitution by the two societies if amalgamated, and are clearly "out of order" in the constitution—the document to be thus submitted. They might have been subsequent "resolutions," providing for exigencies, in case of the adoption of the constitution by both societies.

Article V. creates an "Executive Committee," but nowhere are the duties and powers of that committee defined. Should the Executive Committee attempt to do any thing, it must necessarily interfere with the duties of the Board of Directors, and a conflict of authority would ensue, which might disrupt the organization and destroy its usefulness.

If the Board of Directors be not the Executive Committee, what is that Board created for? What are its duties? And, *vice versa*, it may be demanded—If the members of the Executive Committee are not to "direct" the business of the organization—what are they to do? What are their duties?

When it is sought to obtain an incorporation under the laws of the United States, or any one State, it will be found that the Board of Directors is the *only* executive authority recognized by the law, and the *only* body that can be elected by the members; that it is the duty of the Board of Directors even to elect the officers of the organization; that all business done by any other person is illegal and useless; in other words, that the Board of Directors is the only legal "Executive Committee"—the only power to make or execute the laws made for the government of the organization. If the constitution and by-laws of the organization sought to be incorporated are not in accordance with the law, they will be ordered changed by the State officers. That will cause serious delay, for, as the convention ADOPTED the constitution, after considering it section by section (as the Secretary informs me by letter), the committee was discharged and can have no further power to change or modify any thing; their duties are ended—that committee, in fact, no longer exists.

Again, in Sec. 2, Art. V., there is another serious mistake. [The postal-card ballots are required to be returned to a committee of *two* members, appointed by the Executive Commit-

tee, to "count" and "certify the result." Whoever heard of a secret ballot being sent on a "postal card"? and more ridiculous is the idea that it should be mailed to *two* members—unless it is made in duplicate! Or, was it contemplated to send some to *one* member of the committee and some to the other member? Suppose those "two members" should reside at different points—perhaps some distance apart—how about their getting together to "count" them, and who is to pay the expense incurred? Or would they be required to pay their own expenses for the "honor" conferred on them by the Executive Committee? Manifestly they ought to be sent to one, and should be in a sealed envelope, to be opened in the presence of the *whole* committee, so as to preserve their secrecy and integrity.

Again, these ballots will be accompanied with the dollar for dues, and in many cases (if not all) will be forwarded to the General Manager. If they are sealed as they were last year, is that not the proper person to receive them as well as the dues? for he only can determine who is entitled to vote, by the dues being paid; then for him to call the committee together is consistent and proper, in order to open, count, and certify as to who are elected.

Art. VI., Sec. 3, provides that the Secretary of the Union "shall pay to the Treasurer *all* moneys left in his hands after paying the expenses of the annual meeting." Here is a big "loop-hole." Art. IX. states, "This Union shall hold annual meetings at such times and places as shall be agreed upon," etc. Does the Secretary pay the mileage and per diem of the officers or members, or both? If not, it would be better to have it definitely stated.

Sec. 6 of Art. VI. provides also that the Board of Directors "shall meet at such time and place as it may decide upon." How are their expenses to be paid? If mileage and per diem are to be paid it should be so stated, and the rates ought to be determined by the constitution or By-laws. If they are to pay their own expenses, that fact should also be mentioned before they are elected, for some may object to being so taxed. This is a broad country, and such a Board should be located so as to represent the whole of it; and the expense of such a compulsory meeting would be no mean item, whether it came out of the funds of the Union or out of the pockets of the honorary Board. This is a serious matter; and in enacting such important legislation, is it not better to "make haste slowly"?

There are quite a number of other incongruities which call for discussion and review. Sec. 8 of Art. VI. should be changed in verbiage, and made Sec. 2 of Art. III. And in Art. X. the words "altered [or amended]" occur twice. Amendments *are* always alterations. Why such tautology?

Sec. 7, Art. VI., needs a complete revision. If there can be collected no more than the regular annual dues, without a majority vote of all the members of the Union, why talk about calling for or making *extra* assessments?

If expensive annual meetings are to be held, there must of necessity be a limit to the liability of the Union for their expenses, or it will soon be bankrupt. I fully concur in Dr. Mason's remarks in GLEANINGS, on p. 670, when he says, "This country of ours is too large" to warrant annual meetings and expensive personal representation. If it is attempted to make it representative it will fail unless the Union pays the expenses of the delegates; and if the Union pays the expenses of the delegates, then it will have but little money left (if any) to pay for its only legitimate work—the defense of its members in their legal rights when unlawfully assailed by ignorance, prejudice, and malice.

The whole thing is so incongruous and incomplete that it seems necessary to refer it back to the next convention at Buffalo, for revision. Before it is in proper shape to present to the "National Bee-keepers' Union" it needs a thorough overhauling and reconstruction; and as the convention considered it section by section, and then adopted it, no one now can have the right to alter its language and requirements. There is, therefore, nothing left for its advocates now to do but to await the action of the convention next year; at least, so it seems to—

Yours for every progressive step,

THOMAS G. NEWMAN,
General Manager Nat. Bee-keepers' Union.

[I asked Dr. Mason, chairman of the amalgamation committee appointed at Lincoln, and who in fact prepared the original draft of the Constitution, to reply, and here it is:—ED.]

Friend Root:—Our friend Mr. Thomas G. Newman has kindly sent me a copy of what he calls "Criticism on the Constitution;" and in a letter with which it was inclosed he says he has mailed copies "to all the bee-papers, and a lively discussion should be the result if they publish it." I have no doubt they will publish it, and perhaps a lively discussion of his criticism "will be the result."

His criticism is addressed "To the Officers and Members of the North American Bee-keepers' Association;" but as there is no such association, I presume he means the "United States Bee-keepers' Union;" and as an officer of the Union I should like to have a hand in helping to making the discussion on his "criticism" a little bit "lively," and try to correct some of his misapprehensions.

After the constitution was adopted at Lincoln, it became my duty, as secretary of the U. S. B. K. U., to notify the Advisory Board of the N. B. K. U. of the action taken; and in order to hasten matters I asked the editor of the *American Bee Journal*, who was to publish the

proceedings at the Lincoln convention, to put the constitution and the motion "that we request the Advisory Board of the National Bee-keepers' Union to put this constitution to a vote of the members of that Union at their next annual election, for their adoption or rejection," in type as soon as possible, and send me at once enough proofs for each of the Advisory Board, which he very kindly did.

I at once sent them to the Secretary of the Advisory Board, Mr. Newman, and wrote him in substance that "I sincerely hope the measure will pass, and I hope you will hurry the matter up as rapidly as possible, and get it in the bee-journals so that we can have time to discuss it before the annual election in January." It is more than probable that I asked him to make such suggestions as he might think best; but it was not sent him for the *purpose* of criticism; and as I had before sent him a copy with a similar request, and as in reply he made but one suggestion, I had no thought of his taking upon himself the responsibility of refusing to present the matter to the Advisory Board, and "refer it back to the next convention at Buffalo;" so in all kindness and candor, and with the best of intentions, as with Mr. Newman, I will try to point out what, to me, seem to be some of the "incongruities" of his "criticism."

The constitution of the N. B. K. U., in Arts. III. and V., provides who shall be members, and what officers it shall have, what their duties shall be, how they shall be chosen, and how long they shall hold their position; but it makes no provision as to when the officers are to be chosen. Now, if the N. B. K. U. can make such a grand success with such provisions in *its* constitution, what can possibly be the harm in putting similar but more complete provisions in the constitution of the U. S. B. K. U.? and if it, as Mr. Newman says, shows "incongruities" and lack of "completeness," what shall be said of the lack of "completeness" of the constitution of the N. B. K. U., in the framing of which, I believe, but don't *know*, he took a leading part?

The aim in formulating the new constitution was to in no way cripple or hinder, but, rather, to increase the scope and efficiency of the work of the Union; and its constitution was studied, and its provisions incorporated in the new wherever it seemed advisable, never dreaming that the constitution of the N. B. K. U. was so "incongruous" and so lacking in "consistency and completeness."

He says that "Article V. creates an Executive Committee, but nowhere are the duties and powers of that committee defined." Well, well! did you ever? I wonder if he read the constitution before writing his "criticism." If he did, he could hardly fail to notice that Sec. 2, Art. V., very distinctly defines one of the duties of that

committee, and that half of Art. VIII. and all of Art. IX. are devoted to the same subject; and Secs. 1, 2, and 3 of Art. VI. are wholly devoted to the duties of the individual members of that committee; and in no way, in the discharge of their duties, singly or collectively, do they, as Mr. Newman says, "interfere with the duties of the Board of Directors," and no "conflict of authority would ensue."

He asks, "If the Board of Directors be not the Executive Committee," what is the Board created for? What are its duties?"

If he will read the last half of Sec. 4, Art. VI., and Secs. 6 and 7 of the same article, all of Art. VII. and the last half of Art. VIII., he will find what the Board of Directors is for, and what its duties are, quite fully set forth.

In criticising Sec. 3, Art. VI., he says, "Here is a big loop-hole, because it provides that the Secretary of the Union shall pay to the Treasurer of the Union *all moneys left* in his hands after paying the expense of the annual meeting." It has been customary for the Secretary to pay the usual expenses of the Association out of the moneys he received for membership fees, and pay the remainder to the Treasurer; and I am not aware that any one has ever before thought of there being even a *small* "loop-hole," to say nothing of a big one.

If Mr. Newman considers this "a big loop-hole," how would he, if he were outside of the position of Secretary, Treasurer, and General Manager, fitly characterize the method of handling the hundreds—yes, thousands—of dollars of funds that have been in his hands as Treasurer (General Manager) without a single provision in the constitution for its safety? I have not the means at hand for knowing all about the past condition of the treasury of the N. B. K. U.; but, if my memory serves me correctly, during the years '86, '87, '90, '91, '93, '94, and '95, the General Manager handled about \$5500 of the funds of the Union, and no one said any thing about a "loop-hole;" and last year there was very nearly one hundred times as much of the money of the Union in the hands of the General Manager as was in the hands of the Secretary of the N. A. B. K. A. "Those living in glass houses should not throw stones."

In referring to the meetings of the Board of Directors he asks, "How are their expenses to be paid? If mileage and per diem are to be paid, it should be so stated."

Well, for once I can agree with his "criticism;" and as no such provision is made, the very natural inference would be that "mileage and per diem" are not to be paid them, as is the case with the Advisory Board of the N. B. K. U.

He speaks of a "compulsitory meeting" of the Board of Directors, and "that the expense of such a compulsitory meeting would be no mean item." The "compulsitory" part is the last

sentence of Sec. 6. of Art. VI. and is no more "compulsitory" than the provision in Art. I. of the present N. B. K. U., which says that it "shall meet annually," etc. Now, in the eleven years of its existence has the Union, which "shall meet annually," ever met? and if it has, who paid the "mileage and per diem"? Has the Secretary - Treasurer - General - Manager, been paying "the mileage and per diem"?

In referring to Art. X. he asks, "Why such tautology?" I believe I can answer that question quite readily. It is probable that those engaged in formulating the constitution (among whom were Prof. Cook, Hon. Eugene Secor, Rev. E. G. Abbott, Hon. E. Whitcomb, R. F. Holtermann, J. T. Calvert, L. D. Stilson, Thos. G. Newman, Dr. C. C. Miller, A. I. Root, Bro. Ben, Geo. W. Brodbeck, E. R. Root, F. A. Gemmell, W. F. Marks, Geo. W. York, Hon. G. E. Hilton, M. B. Holmes, E. S. Lovesy (Salt Lake City), H. F. Moore, E. Kretschmer, with myself and more than a score of others, did not represent *all* of the wisdom there is among beekeepers. Pages 737 and 738 of the *American Bee Journal* for Nov. 19, 1896, might be interesting reading for friend Newman.

It seems to me that his "criticism" on Sec. 7, Art. VI., is one of fault-finding rather than an effort to aid in so revising it as to make it better. I see nothing in it that would necessitate a "complete revision" of it, but I think it would be well to so alter it as to erase the words "extra but" in the sentence where it says, "and cause such extra but equal assessments to be made," etc.

In replying to the last two paragraphs of friend Newman's article, I will say that the constitution does *not* provide for "expensive annual meetings," and I can't understand why he so frequently refers to matters that are not even hinted at in the constitution, and have nothing to do with it, unless it be to prejudice members of the N. B. K. U. against the measure. Here is an example: "If it is attempted to make it representative, it will fail," etc. Now, there is not the shadow of a shade of reference in the constitution to any such attempt.

It seems to me that, in the last two paragraphs of his "criticism," he directly insults the intelligence of the nearly threescore beekeepers who "had a hand" in preparing and adopting the constitution, and shows his lack of consideration for the rights and opinions of others (who may be just as able as he to say what is the best course to pursue) in assuming that he has a right to "refer back to the next convention at Buffalo for revision," etc. Since when has it been the prerogative of the General Manager "to refer back," unasked, a matter that the U. S. B. K. U. has requested the Advisory Board of the N. B. K. U. to submit to a vote of its members, quite a number of whom are members of both organizations? and since

when and by whom has it been decided that the General Manager has the power to say that a body of bee-keepers—some of whom rank as the peers of any other bee-keepers—has not the right of petition? If he has this power, the sooner we know it the better; and if he has *not* this power, and he insists on exercising it, the sooner his successor is chosen the better.

The closing sentence of his article is the summing-up of the whole matter. Here it is: "There is, therefore, nothing left for its advocates to do but to await the action of the convention next year; at least, so it seems to—

"Yours for every progressive step."

Shades of democracy! "Where are we at?" Mr. Editor, wouldn't that sentence look a little more complete if put in italics, or even in large caps? "Nothing left for its advocates to do" but to wait till "next year"! Well, I think friend Newman will find that its advocates think there *is* something for them to do besides waiting, if that is the course he proposes to take; and it seems to me that about the first thing to be done is to nominate the General Manager's successor unless he at once proceeds to pull in his bellicose horns and show a little consideration for the wishes of others who have a *right* to ask that they be heard.

I believe I fully appreciate the splendid work and achievements of General Manager Newman in pushing with all his energy, often hopping against hope, till he, with the aid of the able Advisory Board, has established the Union on a firm foundation, and achieved for it victory wherever called to battle; but notwithstanding his great achievements, it seems to me that he has now planted himself squarely in the way of any "progressive step" being taken; and unless he "stands from under" he will be very apt, sooner or later, to ask, "Where am I at?" for the wheels of progress, although they may be blocked for a time, will finally roll on, despite all obstacles.

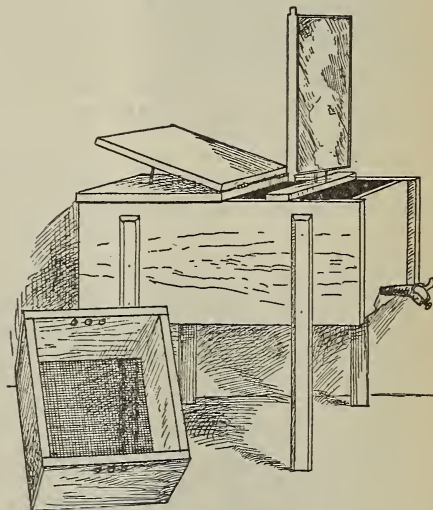
I know of no one having claimed that the constitution is perfect; but it takes nothing from the funds now in the treasury of the N. B. K. U., but adds to the funds; and instead of in any way weakening the efficiency of the work of the Advisory Board, its aim is to enlarge its field of labor and add to its efficiency; and I can see no reason why the members of the Union should not take a "progressive step" by adopting the constitution adopted by the U. S. B. K. U. at Lincoln.

If the constitution is so adopted, the officers elected at the next annual election of the Union will be the Board of Directors of the new Union until their successors are elected at the annual election, in Dec., 1896.

Yours for the new constitution, and "every progressive step."
A. B. MASON.

A HANDY UNCAPPING-BOX.

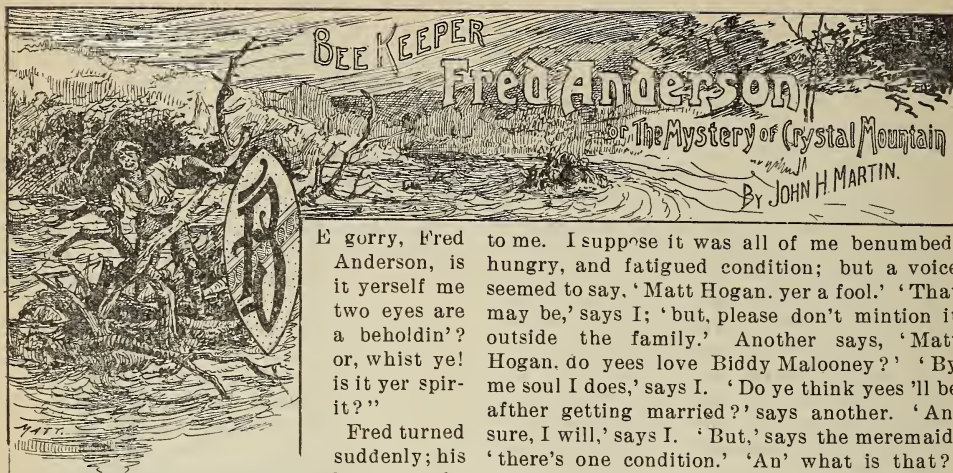
The accompanying illustration is our uncapping-box with a comb in position to be uncapped. You will notice a bar across the box, through which a pin is projecting upward, which acts as a pivot when the center of the end-bar is placed upon it. One side of the comb is uncapped, when it is swung around and the other side cut off, the cappings dropping into the box. The inside consists of two boxes with wire bottoms, one of which is standing outside.



The object in having two boxes is this: When the box to the left becomes filled with cappings or pieces of comb, it is slipped to the left and allowed to drain while the other is being filled; when they are both full the one to the left, which the honey has all drained out of, is emptied in the wax-extractor; the full one is then slipped to the left, and allowed to drain while the other is being filled. The honey can be drawn off at any time through the faucet shown at the right. The cover, which is now folded back, is closed when not in use, which makes it free from ants, robber bees, dirt, etc., and also furnishes a convenient table or work-bench. We have had one of these in use for five years, and would not think of running an apiary without it. C. E. PHENICIE & BROS.

Tacoma, Wash.

[Mr. O. O. Poppleton, when here a few weeks ago, described an uncapping-box that, in outside appearance, must be very much like the one above. The internal arrangement, however, is different. Mr. Poppleton's, while about twice as long as broad, is made so as to take his frames cross-wise. The combs are uncapped on a cross-stick, the cappings falling into the box near the end. In the other end the sliced-off combs are hung, and sometimes the man with the knife will have stored in the box quite a number of combs ahead of the other man, who is extracting. If there is one person, he uncaps until the box is filled with combs, and then he is ready for the extractor.—Ed.]



E gorry, Fred Anderson, is it yerself me two eyes are a beholdin'? or, whist ye! is it yer spirit?"

Fred turned suddenly; his knees quak-

ed, and he grasped the railing for support.

"Matt Hogan," said he, in an astonished whisper, then louder, "Matt Hogan, and alive! thank God!"

"Ha, ha! me dear Fred, yees be a quare janius to think me a dead man whin I am alive from the sole of me great toe to the summit of me head."

"But, Matt, how did you escape the flood?"

"An' it's the same question I'd be afther askin' yerself."

"But, Matt, that big tree-root knocked you off the raft and under the water, before my very eyes."

"An' sure I thought it served yees the same thrick."

"Oh, no!" said Fred; "that's where you lost track of me." And Fred told the story of his escape and sickness; "and you see I am rather shaky yet; but I tell you, Matt, what a load is off my mind to find you alive and well! Hurrah!"

"Hist, there, now, Fred, with yer demonstrations; yees make me blush, for this crowd will think we're loaded with tangle-foot; let's sit down in some quiet corner where we can have our celebration all to ourselves. Yer anxious to know the manner of me escape; so, to make me sthory short, I will mintion that, afther shweeping me off the work-binch, that ould tree-stump took another turn jist in time to let me get aboard. 'Wid yer lave,' said I, as I straddled it. Thin another ould stump locked horns with it so fasht that I had a raft of me own. 'Thanks for shmall favors,' said I, 'an' hurrah for the big ones.' Me gondoly avoided all side iss hues, an' kept in the middle of the river all day; an', Fred, I had no idaa the river was half so long; but, long as it was in the day time, it raached out to the crack o' doom at night; an' I began to faal loike slippin' off, quiet loike, into the flood. But, do you belave it? Miss Alfaretta's mermaids began to talk

to me. I suppose it was all of me benumbed, hungry, and fatigued condition; but a voice seemed to say, 'Matt Hogan, yer a fool.' 'That may be,' says I; 'but, please don't mintion it outside the family.' Another says, 'Matt Hogan, do yees love Biddy Malooney?' 'By me soul I does,' says I. 'Do ye think yees'll be afther getting married?' says another. 'An' sure, I will,' says I. 'But,' says the mermaid, 'there's one condition.' 'An' what is that?' says I. "Hould fasht to the stump," says she. 'An' what if I don't?' says I. 'Why, you fool,' says the voice, 'you'll be drowned. Thin it's yer Biddy that'll marry ould Tim Connor.' 'Bad cess to yees, to the flood, an' to Tim Connor. I defy yees all,' says I; an' I tell yees, Fred, I kept me word, an' clung to the raft. That Tim Connor idaa saved me life. Early in the morning I was taken from me raft more dead than alive by a rescue-boat, and taken to Sacramento. I kept a saying 'Mermaids, mermaids,' so they told me afterward; an' if it was maids I wanted, they said I should have them; an' they put me into the ould maids' hospital. To make me sthory short, I had a long run of favor, an' you see I am shaky yet; but the seein' of yees puts new life into me;" and the two shook hands again. "I see, Fred, fur all the bad luck yees had, yees still interested in baas."

"Yes; but, Matt, that was a discouraging blow to me. I think I will look up some other business."

"Before you do," said Matt, "you'd best see a man who is in camp near the hospital. He has a baa-ranch in the mountains—but, by me soul! there's the man now lookin' at that honey exhibit," said Matt, grasping Fred by the arm.

"Which man?" asked Fred.

"The large man with a slouch hat and long grayish whiskers. He is a docthor; come over an' I will introjuce yees."

"Good afternoon, docthor."

"Why, Matt Hogan! glad to see you; what has come over you, Hogan? you look much better than you did yesterday."

"I have found a rimedy here to-day, docthor, that puts new life into me. Dr. Hayden, allow me to introjuce me friend Fred Anderson, the fellow I thought was drowned along with his honey."

"Indeed, Mr. Anderson, I am more than pleased to meet you. Mr. Hogan has given me a history of your conversion of a bee-cave into

something useful, and, later, of the loss of all by the flood."

"Yes, Matt was my best helper, and I understand from him that you are also interested in bees."

"I am a little interested," said Dr. Hayden. Call at our camp this evening, where we can have a little bee-keepers' convention all to ourselves. Mr. Hogan will show you our camp. I will therefore bid you adieu until evening."

"That is what I call a fine-appearing man," said Fred; "verily, like all bee-keepers; but he seems to wish privacy in respect to his business. Bee-keepers, as a general thing, wish to give their little knowledge to all the world, and to make as many more bee-keepers as possible."

"Yes," said Matt, "there's Fred Anderson setting up one Hogan and one Buell in the business."

"That is even so, Matt; but this man seems to be an exception. I shall enjoy a talk with him."

Fred and Matt were prompt in their appearance at the camp, and Fred found a curious assortment of Indians and Indian ponies.

Dr. Hayden's greeting was cordial, explaining that it was unusual for him to be accompanied by his dusky friends; "but this being fair week I brought the boys along to give them a glimpse of civilization. But if what I see here in Sacramento is a specimen of the civilization of my race, the earlier we get back to our quiet homes the better. The tribe is not addicted to gambling, drunkenness, or debauchery."

"That is just my opinion," said Fred, "and I am disgusted with the moral aspects of this fair."

"Me friends," said Matt, "yees have not been here long enough. The bad characters are from other pairts. There's many good people here; and fur a quiet place and Christian people yees will find it in the ould maids' hospital."

"Matt is greatly taken with the Sisters of Charity," said the doctor, "since they nursed him back into health; but I am thinking they will not thank you for calling them old maids. But now about bees. You must have had quite an extended experience with them, Mr. Anderson."

For an hour the conversation about bees never flagged. Fred hardly observed that the doctor was getting to the amount of his bee knowledge; but he did observe that he adroitly evaded giving the definite location of his apiary. "In the mountains," he would say, when too closely pressed; but "mountains" was an indefinite term, for mountains were north, east, and west; and anywhere from fifty to one hundred miles away. Finally the doctor exclaimed, "Well, Mr. Anderson, I suppose you were greatly disappointed over the loss of your fine apiary and your honey—all the labor of the season?"

"I certainly was and am," replied Fred; "and since I have been here in Sacramento I have seriously thought of turning my attention to some other business."

"I don't know about that," said the doctor. "I know it appears to be a cruel blow; but are not these crushing adversities given to us that we may make our success the more brilliant?"

"I had not thought of it in that light," replied Fred. "My whole business is swept away past recovery; and if there is a brilliant success for me, the way seems to be blocked by the lack of means to work with."

"Well, now, let us figure a little," said the doctor. "You are sober and industrious, well posted in bee culture, and need a place where you can put your talents to good use. Listen to this proposition: Come to my mountain home and take charge of my apiary; and," said he, laying his hand upon Fred's knee, "you will never regret it."



MATT TELLS THE STORY.

"But, Dr. Hayden, you have not told me where the apiary is located; and should I accept your offer I should want to know where I am going. That is a reasonable request, I am sure."

"It certainly is," replied the doctor; "but for peculiar reasons, which I can explain hereafter to your satisfaction, I can not tell you about the location while in Sacramento. I can, however, conduct you to the place; and after examination, if the outlook is not to your liking, you can return at my expense."

Though Fred was not really satisfied with this arrangement, his curiosity and love of adventure were excited. Dr. Hayden's kindly manner also prompted him to accept the offer.

While considering the matter, Fred's thoughts centered upon Alfaretta. Their lives had of late been bound together by so many episodes that he was fain to stay near her all the rest of his life. But he further reasoned that a few

months' absence would enable him the more clearly to realize the condition of his own mind, and also enable him upon his return to detect, if there was in her, any real mental improvement. With these thoughts in mind he decided to cast his lot with Dr. Hayden; and, turning to him, he said, "I would accept your offer, doctor; but as you leave to-morrow afternoon I could hardly be ready to accompany you. I have an errand to perform. A very kind friend of mine up the river—Prof. Buell—"

"Prof. Buell! Buell," interrupted the doctor. "Prof. Buell? Why, that name sounds half way familiar; but my professor was plain Bull—a good strong name—Bull, and a good man he was too."

"Well, Fred," said Matt, after leaving the camp, "yees are gettin' along foine with the docthor; and something whispers me (perhaps it's one of Alfaretta's mermaids) that yees will make a good strike to go with him. Respect-in' the pony, I will see to its delivery to Mr. Buell, for I must go up the river soon."

"It seems that things could not be more nicely arranged for my departure," Fred replied.

Matters were satisfactorily arranged the next day, and late in the afternoon the little band left camp. Dr. Hayden, having in mind Fred's recent illness, provided him with one of the easiest-riding ponies; "and," said he, "you will scarcely know the difference between that pony and saddle and a rocking-chair."



"WELL, SIR, MY APIARY IS LOCATED IN THE MIDST OF THAT SPARKLE, CRYSTAL MOUNTAIN."

"Prof. Buell, as I was saying," continued Fred, "commissioned me to purchase a gentle riding-pony for his invalid daughter."

"That's another familiar feature," said Dr. Hayden, reflectively. "My professor had a daughter, but Bull was the name—Bull. But the pony I have is just what you want. We brought in a few pack ponies, and shall have but few things to pack to the mountains, and can spare one—a pretty black pony, gentle, fleet of foot, with all the qualities for a lady's horse. You have plenty of time to-morrow to give the pony a trial. Take it over to Matt's old maids' hospital and give each dame a ride."

Fred had so much confidence in the doctor that he had a mind to accept the pony then and there; but he deferred his decision until the morrow.

They pursued a northwest course, traveling upon unfrequented roads, and well into the night of the second day they camped beside one of those beautiful lakes which give Lake County its name."

"Your companions must be familiar with this route," said Fred, "to follow it so easily in the night."

"Not only the Indians but their ponies know every inch of this ground," said the doctor, "and to-morrow night we make our last stage; and I will tell you now that we shall then be in the Round Valley Indian Reservation."

"Round Valley?" repeated Fred; "why, I have heard that those Indians bear an ugly reputation."

"You should not believe all you hear," said the doctor. "You said a little while ago that,

from your observation, this is not much of a honey country; but appearances are deceiving. To use a mining term, this country has pockets of honey flora in the mountains second to none in the world. It is so with the Indians. People are unfavorably deceived respecting them."

The last night of the journey wore away. So much night travel caused Fred to sleep more or less in his saddle while his pony bore him safely forward. The morning dawned brightly as they commenced the descent into Round Valley.

"Now," said the doctor, riding up to Fred's side, "I can show you the location of my apiary. Here we see the Indian rancheria in the valley; but look beyond to those mountains, twenty-five miles away. Do you see that glistening in the morning sun?"

"Yes," replied Fred, "it looks like a city with gilded spires."

"Well, sir, my apiary is located in the midst of that sparkle, and that is Crystal Mountain."

"Crystal Mountain!" said Fred, in astonishment. "Why, doctor, ever since I came to California I have heard nothing but evil reports from that locality. The man who claims to own it is described as a brigand, a thief, a murderer—sly, treacherous, unknown, yet luring a score of people to their death; and your apiary is there!" and Fred, grasping his bridlereins, and turning suddenly in his saddle, with a forced smile exclaimed, "And, Dr. Hayden, you are, perhaps, that mysterious man."

"I am the man," said Dr. Hayden, dryly.



COMBS ATTACHED TO SEPARATORS.

Question.—Will you tell us, through the columns of GLEANINGS, how to prevent the bees fastening the comb to the separators? I had several colonies which attached the comb in nearly every section to the separators—some in only one place, while a few were attached in several places. Other colonies gave perfect combs, not a single attachment being made to any separator.

Answer.—Were I to answer in short, I would say, "Put each colony in just the condition as were those which did not attach a single comb to any separator;" and I sometimes think such an answer would be the best reply that could be given in the majority of cases; for it would set the person, having the trouble, to studying into that which would make him (or her) an intelligent bee-keeper, through creating in him a determination to master every problem which might come before him along the line of our beloved pursuit. But as the managers of GLEAN-

INGS have set this department apart for making plain those things that are puzzling to the novice, I will give some of the things which contribute toward an attaching of combs to the separators, which things are to be avoided.

The greatest cause for attaching combs to the separators lies in not having the hives stand level, for the bees always build their comb perpendicular—especially so in the case of narrow or thin sections, where the uprights are no more than $1\frac{1}{8}$ inches wide, as in this case it requires but very little out of the perpendicular for the lower end of the comb to come near enough to the separator for the bees to build brace-combs out to the separator to hold the comb in place, as they nearly always look out for bracing in this way where the septum of the comb comes within $\frac{1}{4}$ to $\frac{3}{8}$ of an inch of any part of the hive. It is not necessary that the hive be leveled both ways, unless the combs in the brood-chamber run in an opposed direction from those in the sections; but it is necessary to have the hive level in the direction of the open sides of your sections if you would produce the nicest of section honey. And it is not well to do this leveling with the eye, for, unless the eye is trained in this matter, it is little better than guesswork. I use a spirit-level for this work; but in the absence of this I would use a plummet, which any novice can make.

Next to having the hives level comes the matter of how the starters are put in the sections. If in a slipshod way, so that they pull off or fall down from the weight of the bees before they thoroughly attach them to the top of the sections, poor combs and many braces will be the result. Then if care is not taken to have these starters run true with the sections, they will be angling enough so that the bees will swing the edges of the combs around and attach them to the separators instead of the sides of the sections, thus making a nasty mess when we come to remove the separators. Even where full sheets of foundation are used, some are so careless in putting them in that the edges are nearer the separators than the sections, when placed on the hives, when the bees will attach them to the nearest point, as they always do, for they care not as to the salable quality of their product. But in full sheets of foundation and a level hive we have the greatest preventive against these brace-combs, and latterly I have come to the conclusion that it does not pay to try to dispense with full sheets of thin foundation for each section, only as we have full sheets of drawn comb to use in place of the foundation. But the full sheets of foundation will not remedy the trouble where the hives are much out of level, for the bees seem to have a way of building or drawing out their cells on the side of the foundation farthest away from the separators first, which tends to curl the lower end of the foundation around nearer the

separator, till the bees attach it to the separator instead of the bottom of the section.

Next in order comes the putting-on of sections while the colony is too weak to fully occupy them, these weak colonies commencing on the "bait" sections first, and then spreading out from there in either direction; but as it is the warmest and most homelike on the sides next to the center, they draw out the cells near the center of the foundation, up and down, first on this inside of the foundation, which causes it to curl at the sides till it comes nearer the separators than to the sides of the sections, and thus it is attached to the separators instead of to the sections, where it should be.

Lastly, this trouble may come from putting the sections on too early in the season, before the honey-harvest commences, or allowing them to stay on the hive during a long period of scarcity, when the bees, not having any other work to do, amuse themselves in gnawing the foundation, from mischief, or because they think it is some foreign substance not needed in the hive, or to use the wax thus gnawed off to stop cracks or crevices about the hive. It matters not from what motive this gnawing of the foundation is brought about, it can result only in less perfect combs than would have been the case had a good honey-flow come on immediately after putting the sections on the hive. Such gnawing more often results in the twisting-about of that part which is left, than otherwise, and, in thus twisting some portion of the foundation, come nearer the separators than the sides of the sections, when brace-combs are the result. The putting-on of sections too early in the season can be easily avoided by studying our location as to its flora; but as we can have no control of the secretion of nectar, or the periods of scarcity coming after the sections are on, this part of the matter can not well be overcome where the ordinary foundation is used, unless we can breed a race of bees that will not gnaw the foundation when they are idle. The new foundation now being worked on (which I hope may be brought to perfection), having quite a depth of cell, will overcome this gnawing matter, I think; for in all of my observations I have never known bees to cut out drawn comb, no matter how long they were idle.

Now, by avoiding all the things which tend toward these brace-combs being attached to the separators, we can have perfect combs, and honey of the highest quality, all other things being equal; and I have so far overcome this matter that hardly one section of honey out of 300 is defective along this line.



HEART'S-EASE.

I call attention to an error on page 790 of GLEANINGS. The "heart's-ease" or smartweed mentioned by Mr. Stilson is a species of *Polygonum*, and belongs to the buckwheat family and not to the violet family, as the editor supposes. It is one of the many instances of confusion of common botanical names. Heart's-ease properly refers to the pansy, or to its prototype, the species *Viola tricolor*, which belongs to the violet family. The various species of *Polygonum* are known by the common names, "smartweed," "heartweed" (from the heart-shaped markings on the leaves of some species), and incorrectly by "heart's-ease," which in this case is doubtless a corruption of heartweed.

Grav gives the name smartweed to the section *Persicaria*, to which section the plant in question belongs. To the whole genus he gives the common name knotweed, doubtless from the fact that they all have swollen joints. Several of the polygonums are valuable honey-plants; but aside from that they do not have much economic value, as does their near relative the common buckwheat.

Boulder, Colo., Nov. 6. D. M. ANDREWS.

[After Nov. 1st issue went out, and before yours came, I noticed the error and corrected it in the next number (see page 812). But heart's-ease is now an accepted name for a species belonging to the *Polygonaceae*, and in the later botanies you will probably find this name recognized. It is accepted by the Standard Dictionary, and the Latin for the heart's-ease in question is *Polygonum persicaria*.—ED.]

BEEES AND BEARS IN FLORIDA; "SHOOING" THEM OFF WITH AN APRON.

Bees do better here near the swamps, and sometimes people take them to the swamp and leave them; then the bears generally take to them and rob a hive every few nights, which destroys the bees as well as the honey. They don't use the care in robbing bees that men do. I have known bears to come within a hundred yards of a man's house and take honey from his bees at night. They do sometimes climb a tree that has bees in it, and gnaw the hole larger, then run a foot in and get out as much honey as possible. I know one tree this year which was cut, and had been robbed of the honey by a bear. I cut two trees this year, hived the bees, and left them in the woods; and when I went back to rob them a bear had taken the honey, and the bees were gone.

Bears are plentiful here, but are wild, and hard to find. They gnaw a good many pine-trees. It is said they gnaw them to get the gum off the tree on their hair to keep yellow-

If you would like to have any of your friends see a specimen copy of Gleanings, make known the request on a postal, with the address or addresses, and we will, with pleasure, send them.

jackets and bumble-bees from stinging them, for they dig out lots of their nests. But they do their mischievous and damaging work on hogs.

C. B. OWENS.

Cassia, Fla., Oct. 31.

[Mr. O. O. Poppleton, who visited us recently, gave us substantially the same facts regarding the habits of the bears in Florida. In speaking of their temerity, or lack of it, rather, he said his wife, alone, and after nine o'clock at night, was met by a bear who, like herself, was in search of turtles' eggs. Did she run and scream? Not a bit of it. She simply "shooed" him off a scampering as she would a lot of chickens, and then gathered the eggs. I think it would test the courage of most men to test a bear's courage in a similar way, even if they had been possessed of one of the aforesaid aprons.—Ed.]



THE photograph of the Lincoln convention is very good. It can be obtained of Lovell, photographer, Council Bluffs, Ia., for 50 cts. Later on I hope to present our readers with a half-tone of it, having obtained the consent of Mr. Lovell.

B. S. K. BENNETT, of the *Pacific Bee Journal*, is said to have cited certain banks as references, without authority. This same Bennett is the one who has been attacking George W. Brodbeck and the Bee-keepers' Exchange. If Mr. Bennett seeks the favor of bee-keepers of his State he should change his tactics a little.

A NEW book on bee-keeping, for British bee-keepers, by Chas Nettlesmith White, is just out, and it is entitled "Pleasurable Bee-keeping." It contains 135 pages, nicely printed, and is full of illustrations. It seems to cover quite fully bees for pleasure and bees for profit, and will no doubt fill a niche in English bee literature. The price is not stated, but it can be obtained of the publisher, Edward Arnold, 37 Bedford St., London, W. C.

ON page 826 of our last issue I suggested that bee-keepers might clamor for a new General Manager for the new Union, on the ground that the present officer, Mr. Newman, was located on the Pacific coast, clear away from the cities of Chicago and the East, where the evils of adulteration were the greatest. In a private letter referring to this, from the editor of the *American Bee Journal*, he calls attention to the fact that some might construe this as meaning that he, Mr. York, ought to be the new Manager. In justice to my brother-worker, I will say that his duties are such that he could not be constrained by love or money to accept the position. As some of his friends

already know, he is already an overworked man, and another straw placed upon his back—well, he wouldn't take it. In the preparation of this editorial I did not have in mind Mr. York or any one in Chicago; and for fear that some might think that I am seeking the job, I will say right now and for all time, that I can not consider it for a moment. I have too much other work on hand to do it justice.

MR. MERRILL, of the *American Bee-keeper*, says that "no doubt" the resolution passed by the Lincoln convention, condemning the action of the Erie Co., N. Y., Bee-keepers' Association, recommending the general Government to send an expedition to India to secure *Apis dorsata*, was "by the dictation of the half-dozen wise men—Messrs. Root, York, Miller, Dr. Mason, etc.;" that "this convention of war-horses usually run things pretty much their own way when they get together." Mr. Merrill, if I am correct, never attended more than one of the North American conventions, and that, unfortunately, was one where some discord was apparent—much more so than in any dozen preceding conventions. All conventions of this association should not be judged by this one. The action at Lincoln condemning the Erie Co. recommendation was not "at the dictation" of any of the gentlemen named; neither had they any thing to do with it beforehand. The resolution was introduced by Mr. Stilson, of the *Nebraska Bee-keeper*, and upon mature deliberation was passed without a dissenting vote. The main argument used was that there were other things much more needed than the importation of a new race of bees.

RIDGEPOLE MUSINGS; ALFALFA AND THE WEST.

It may not be generally known that R. C. Aiken and family, formerly of Loveland, Col., a bee-keeper and correspondent of considerable prominence, is now migrating eastward and southward. He has a specially constructed wagon that I suppose takes largely the place of the good old-fashioned "prairie-schooner." Driving through the country as he does, he has a large opportunity for observation. If I am correct, he travels this way in order to study climate and localities better, for he expects to carry on his bee-keeping operations in a new field; and his point of residence not being fixed he is taking his time to look over carefully the country through which he passes. He had arranged to travel so as to be in Lincoln at the time of the convention, Oct. 8th and 9th. He took a prominent part in the proceedings, and gave to the convention much valuable information regarding the West and alfalfa.

Between sessions, I sought him out and proposed that he write a series of articles for GLEANINGS, telling us about alfalfa, the West,

and his travels through the country generally. An arrangement was made whereby he will write a series of articles under the appropriate title of "Ridgepole Musings," for he formerly occupied the very ridgepole of the continent. He will show us later on his "prairie schooner," the hive he has been using, and then tell some of the drawbacks in the alfalfa-fields. The alfalfa localities have been boomed too high, he says, and there is another side to the story.

THE ABSURDITY OF SOME OF MR. CHESHIRE'S STATEMENTS ON THE SUBJECT OF FOUL BROOD.

AN excellent article on the subject of curing foul brood, by Mr. G. M. Doolittle, appears in the November issue of the *American Bee-keeper*; and what he says regarding the accuracy of Frank Cheshire's statements on the subject of foul brood accord with my experience exactly. Mr. Cheshire in his work, "Bees and Bee-keeping," used this language: "The popular idea that honey is the means by which foul brood is carried from hive to hive, and that mainly through robbing, is as far in error as that only casually can honey convey it from colony to colony." Mr. D., commenting on this, says it is so directly at variance with what is said by Mr. Quinby, Jones, and his own experience, that it seems strange to him that any of our apiarists could indorse it. I don't believe any of our apiarists do indorse it, friend D. I remember seeing the statement at the time when Mr. Cheshire's work came out, and our own experience convinced me that on this subject, at least, he had very little practical experience. It should be remembered that he condemned most severely certain statements by Prof. Cook and other leading bee-keepers as erroneous, and so inaccurate as to be unworthy of further notice. As time goes on, the statement of Mr. Cheshire, as given in the above quotation, will be proven to be more and more a glaring error, and mischievous, because some, accepting it as fact, will be careless with honey coming from foul-broody hives. Doolittle goes on to show how, by his own experience, honey is the *chief* means of conveying the infection (which it surely is), and then draws attention to another ridiculous statement where Cheshire says, "There is not one single idea about this disease which is not incorrect, except that it is contagious. Time, I am convinced, will fully prove that the old bees almost invariably are the channels of infection."

It is not wise to be very positive about any thing in bee keeping; but there is one thing I think I do know; and that is, that old bees are *not* "almost invariably the channels of infection." We cured something like 50 colonies by putting all the bees, including the old bees, on foundation in clean hives. In *not one case* so treated did the disease ever reappear; yet this

would not be so significant were it not that all bee-keepers like Mr. Doolittle, who have had any experience with foul brood, corroborate it. If Cheshire had not been so severe in his criticisms of the statements of others his own errors would not appear so glaring.

CREAM-COLORED SECTIONS AND SHIPPING-CASES.

In our previous issue I spoke of, and I believe I showed the desirability of, using cream-colored sections rather than white, even at the same price. It not unfrequently happens that the sections are whiter than the combs. It is not the *sections* that the bee-keepers desire to sell, and show up to advantage, but the *combs* which they contain. For a similar reason, shipping-cases should be made of the darker shades of basswood. One little realizes the difference in favor of the darker woods until he compares the same set of combs in a snow-white shipping-case and one of cream-colored basswood. This snow-white dress for sections and shipping-cases has been a foolish fad, and the sooner it dies out the better it will be for the producer.

The fruit-growers have their peaches and grapes put up in baskets covered with mosquito-netting of a higher color than the fruit; for instance, peaches will be covered with a very bright colored pink mosquito-netting. The effect of this netting is to give the peaches a color and bloom that they do not possess. Now, I am not advocating that bee-keepers should try to make their combs look whiter than they really are, but I do advocate that they use those sections that will give their combs the *full value* of their color; in other words, make them white by comparison.

By "cream color" I do not mean the dark second quality of sections, but those that are a shade darker than the so-called "show-white"—just dark enough so that the white combs do not suffer by contrast.

Since the foregoing was written, the following has come to hand, bearing on the same question, but taking the "other side."

ANENT "SNOW-WHITE SECTIONS, AND THE EFFECT OF CONTRAST," AND WINTERING.

E. R. Root:—If your argument on page 826 is valid, why is it not better to paint the sections black? The contrast would be stronger, and any cheap material could be utilized for sections. You wouldn't have to scour the country for white poplar, nor sort your basswood lumber. But do you really think any section that was ever made was any too handsome for white clover, basswood, or alfalfa honey, or even for buckwheat honey? The comb and cupplings of the latter are just as white as snow, and its appearance is enhanced by a beautiful section just as truly as any other kind of honey. I never saw any first class section honey, commercially considered, that wasn't in first-class sections. Did you?

But how about that Danzenbaker section honey shown at the Michigan State Fair, which you told me about? Wasn't that put up in white sections? I believe you are joking on page 826.

I cellared 58 colonies of bees November 12. It took self and hired man about two hours. You may talk all you please about chaff hives and outdoor winter-

ing; but I am convinced that for this locality cellar wintering is not only the best for the bees but the cheapest mode of wintering. I could not protect with chaff and outside cases for less than one dollar per colony; but it doesn't cost me five cents apiece to put them in the cellar and remove them in the spring.

A year ago I left on their summer stands two of the strongest colonies in their yard. I protected them by s-tting boards on all sides but the south, and put cloths over the frames. We didn't have a severe winter, but both were dead before spring. This is the first time in all my experience when I had the temerity to leave any outdoors. I shall not try it again, unless I get lazier as I get older. For many years I weighed my bees in and out. The loss in weight was always less than ten pounds average; time, about five months. EUGENE SECOR.
Forest City, Ia.

Painting sections black on account of cost would be out of the question. Using the darkest available lumber—black walnut—would likewise be out of the question for the same reason. There is a golden mean in this matter. A black or dark section would be one extreme, and a "snow-white" would be the other.

No, I don't think a section was ever made too handsome for white honey in point of workmanship; but in point of color, bee-keepers in their demands have gone to the extreme. Sections have had to be as white as or whiter than the average of honey.

When goods are displayed for sale, the public judges by comparison. If the *honey* is perceptibly whiter than the *sections*, said sections a little darker than the so-called snow-whites, the *honey* will appear whiter, and to much better advantage. Bear in mind that the producer wishes to set off his *honey* rather than the *sections*. If the section is *as white* as the honey, there is no contrast in favor of the honey. If again, the section is *whiter* than the honey, the contrast favors the section, and the honey itself, the very thing to be sold, appears at a disadvantage.

Now, let me ask you a question: Do you really think any comb honey—clover, alfalfa, sage, or what not—was ever as white as snow, strictly speaking? I don't; and when we speak of comb honey as being snow-white we are speaking in a term of hyperbole, just as we say a horse runs like lightning, when we don't mean any thing like that speed.

You say you never saw "any first-class honey, commercially considered, that wasn't in first-class sections." Neither did I. Don't misunderstand me. I was not advocating second-quality or number twos, either in workmanship or lumber. I did not mean to give the impression, as you will see by re-reading page 826, that I favored dark, checkered, or sappy wood, or sections that were not first-class. I did mean, however, a uniform color, sound basswood timber of a *shade slightly darker than the very whitest basswood*.

That Danzenbaker comb honey was not in the so-called "snow-white" basswood, but in sections of a color described in the italics above. That would go to prove my argument.

Regarding the matter of wintering, I have no doubt but that, for your locality, cellar wintering is the better. In fact, in our ABC of Bee Culture and other literature we say that, for some localities, cellar wintering is better, and for others the outdoor system.

MR. NEWMAN AND HIS CRITICISM.

On page 853 appears General Manager Newman's criticism on the constitution that was adopted by the Lincoln convention, and which was published in our Nov. 1st issue. To say that the staff of GLEANINGS was surprised at such uncalled-for criticisms is putting it very mildly indeed.

If Mr. Newman was *really anxious* to bring about amalgamation, why did he not offer his criticisms before? Practically the same constitution was published on page 684 of our issue for Sept. 15—at least three weeks before the Lincoln convention. He could have very easily lodged these criticisms with the Secretary, Dr. Mason, and the same would then have been duly considered by the North American. He would then have saved all this space in the bee-journals.

I may be wrong, but I believe Mr. Newman's policy, while apparently favoring amalgamation, has been at heart one of delay and obstruction, and this same thought has been suggested in a private letter to me by one of Mr. Newman's friends. It seems that hardly one of his criticisms is valid, and that he was *trying* to find fault in order to prevent and possibly postpone amalgamation indefinitely. If this is his policy, GLEANINGS will take every honorable and fair means to defeat him; and if he is a candidate for reelection it will work to defeat him in that also.

Many of us worked hard to get the constitution of the present Union amended so that it (the Union) could use the funds for prosecuting dishonest commission men and adulterators of honey. I predicted that the membership on such a basis would be increased. After the Union was reorganized the membership was increased slightly in anticipation of its doing new work. But what has Mr. Newman done in the way of fighting adulteration and dishonest commission men? Practically nothing.

Mr. Newman's criticisms are strained, ill timed, and, as Dr. Mason says, a direct insult to the intelligence of some of the best men in our ranks. His efforts to read into the constitution some *awfully* bad things that are not in the text at all, and then hold them up to ridicule, are certainly as absurd as they are uncalled for. To refer to a secret ballot, for instance, when there is nothing of the kind mentioned, and to make so much ado about paying the expenses of delegates when there is nothing of the kind in the constitution, shows that Manager Newman was hard up for something to pick at.

OUR HOMES.

I am come that they might have life, and that they might have it more abundantly.—JOHN 10:10.

The words of the above text occurred to me while I was thinking that Christianity was really at the very foundation of all civilization, life, and light in this world of ours. A faith in Christ Jesus gives humanity *life* in the best sense in which the word can be used. It raises up and ennobles humanity and human life. It makes men after God and in his own image. It is really the stepping-stone to education. As a rule, the schools and colleges of the world are founded on a faith in Christ. Truly did he come into this world of ours that we might have life, and have it more abundantly.

This thought was brought to my mind with more emphasis than perhaps it ever was before as I listened to a talk last Sunday evening from a woman whose lifework has been teaching in the far West. For many years she was in the employ of the New West Educational Society. She gave us a sort of word-picture of her labors in one little town in Idaho. She was sent there about fourteen years ago. At that time there were no schools within many miles in any direction. The children were growing up entirely destitute of school privileges, and they were really *hungering* for a school. The town as she found it was composed of cowboys, Indians, and a class of people who are often found in the vicinity of the mining regions of the far West. I hope that no reader of GLEANINGS will feel hurt when I mention that the Mormons were pretty well intrenched there at the time. One of the leading men of the town had fifteen wives all together. As a rule these Mormon friends were opposed to the Yankee schoolma'am, on general principles; for, as a matter of course, if she taught Christ Jesus she would, at least in the end, be a rebuke to polygamy. Our good friend Miss Virginia Dox was, however, agreeably surprised to find a warm welcome awaiting her. The fact is, the fathers and mothers, and chil ren too, had been longing for a school, and they were so eager to see a school started in their town that they forgot all differences, and warmly welcomed the little schoolma'am. There was no schoolhouse in the town; but in order to begin work at once, a vacant dwelling was secured. Nobody knew how many pupils would come; but they thought that, if the largest room should not prove sufficient, she could occupy two rooms, the door being open between them. If I remember correctly, there was more than a roomful the very first morning. The juveniles took their places on cheap wooden benches that had been hastily provided, and waited anxiously to see what the schoolma'am was going to say to commence with. Her remarks were something as follows:

"Children, we expect to have a real good time here together; but in order to do so we must have law and order. Now, I am not going to read a lot of rules, but I am going to give you just one rule to take the place of all others. This one rule must be that we love each other. Unless I love you, I can not really do you any good; and unless you love me, you can not really do me any good; therefore the one rule of our little school is to be that we love each other."

Under the influence of this same love between pupil and teacher, this school began to thrive. The children soon had such glowing accounts to give of the wonderful things that they had learned at the school that the older ones caught the enthusiasm and wanted to go too; and the little teacher gave each a very warm welcome.

The older ones used tobacco, both boys and girls. She said that, if she had ruled out tobacco to start with, she would have ruled out the greater part of her pupils. Blasphemy among the older boys—aye, and some of the girls too—was also a common thing in that Idaho town. She did not stop the swearing all at once, but she made up her mind that it would have to go eventually.

Pretty soon the parents caught the fever. Before the school opened, beer-drinking was so common that almost the whole of the inhabitants patronized the saloon more or less. This she passed by for a while; but her triumph came later on. When some of the *parents* talked about going to school she told them smilingly that she would do the best she could for all who wanted to come; and it was no uncommon thing to see fathers and mothers studying in the same class with their children. She mentioned seeing a man of forty-seven in the same class, and studying the same book, with his little girl *seven* years old; and the girl was the brighter and better of the two in their recitations.

At first everybody who owned a dog—and almost every one did own one there in those days—had to bring that dog to school. Perhaps the dogs were curious in regard to the new points of interest; but by degrees the teacher managed to draw the line, excluding the dogs during school hours. Had she undertaken to banish the dogs at the outset it would probably have banished pupils, or a great part of them, as it was so common to see the dogs everywhere.

By the way, dear friends, have you never noticed how common a thing it is to see a town of two or three hundred people all becoming enthusiastic over some particular new thing that comes up? This new thing may be pitching horse-shoes or playing marbles or flying kites; it may be skating in the winter time; it may be having spelling-schools; yes, and sometimes beer-drinking and smoking tobacco seems to take the energies of all classes of one of these little towns. Under the guiding hand of some good and wise leader a community of this kind *may* all get a fever for getting an education; and what a glorious thing it is when this is the case! Well, this one town and the country roundabout seem to have been strongly taken with a wonderful craze to *go to school* and learn to read. The cowboys caught the fever, the Indians abandoned their usual habits, and they came too, and made their flat noses still flatter against the window-panes of the three-room schoolhouse. The teacher, it seems, had a wonderful gift for the work, and, besides, her heart was full of the grace of God and the love of Christ Jesus. She went out and took the Indians by the hand and won their confidence so as to bring them in also. When the mothers also began to come, bringing their babies with them to such an extent that it was a serious interruption to the lessons, she planned an evening school for the benefit of the mothers. The children could stay at home and take care of the babies while the parents went to the *evening* school.

Perhaps some of you may laugh at the idea of such a school as Miss Dox kept. Instead of saying "yes" to a question from their teacher, she would be more likely to get "you bet, schoolma'am." She says she remembers one great stalwart specimen of manhood who was so slow in answering the questions she gave him that she was about to pass on to the next. Said he, "Just hold your horses, schoolma'am. I have got it all in my head, and I will get it all out on the square if you will only give me a little time." And, true to his promise, he did.

When she had obtained a sufficient hold on the whole community by her cheerful and bright way of teaching, a Sunday-school was proposed. The Mormons held some sort of services on Sunday, and they raised some objection, fearing the new Sunday-school might conflict with their teachings. But she compromised the matter by agreeing to attend their Mormon services if they would attend her Sunday-school; and she even told them that they might convert her to their Mormon religion if they could do so. She had the grace of God in her heart all day long; and, as a consequence, the Sunday-school flourished like the day school, and crowded every thing else into the background.

The saloon-keeper was quite a friend to the school business until he saw that it was spoiling his custom; then he remonstrated some; but the good-natured schoolma'am was too much for him. The profanity that had been so common was giving way day by day and week by week as the result of that Sunday-school, and people came from miles around to drink in the glad tidings that were sure to be proclaimed every Sunday.

In the neighborhood was a girl of seventeen who was caring for a poor intemperate father and a family of children. In her zeal to have the children get an education she went out in the woods and cut down trees, and did almost every sort of man's work. She had such a reputation for training and breaking wild mules and horses that they named her Wild Anna; and when Miss Dox found her she was the center of a crowd gathered in front of the saloon while bets passed from mouth to mouth as to whether Wild Anna would succeed in conquering a vicious mule, as she had succeeded in taming all that had heretofore been brought to her. Anna had a peculiar gift for managing horses. She too caught the fever, however, and wanted to go to school and be taught to read and write. I can imagine how our little schoolma'am thanked God when this great stout girl of only seventeen came to her to be taught as a little child. She had not been there many days before the schoolma'am took her by the arm and proposed that they should go out to walk one noontime. During that walk the teacher told her the story—the old, old story—of Christ and him crucified. The wild girl was touched. She confessed she had never heard any such wonderful story before.

"Why, teacher, can this man of whom you have been telling me—can he be the Jesus whose name I have taken upon my lips, especially while with those men breaking their wild horses? Can it be that this one whose name I have so often taken in vain was he whom God sent down from heaven to call poor sinners such as I am 'o himself'?"

Then she stopped her coarse talk right then and there. As a means of providing food and clothing for the poor father and motherless children she kept on, I believe, using her rare gift and skill in training vicious horses; but from that day forward she was a friend of the little schoolma'am.

In those days, in the mining towns remote from railways there were more or less stage-drivers; and among others who were called to come to that new Sunday-school was one Jimmie Boyle, a stage driver. He had patronized the saloon so long that his clothes were ragged, his hair and beard untrimmed; and when one of his friends asked him to come, rough and rude as he was, he recognized the need of fixing up a little. Without saying a word to anybody he scraped up his money, made a long trip to Ogden, Utah, and purchased a brand-new suit of clothes. When somebody joked about it he

told them his new suit was simply his "trotting-harness;" and much was the merriment when Jimmie presented himself so fixed up that nobody recognized him, and brought in the wake his wife and children. Henceforward he was a strong and faithful champion of the little schoolma'am and of the Sunday-school work.

There was in the town a notoriously wicked man, but he was a man of some wealth. Somebody told the schoolma'am that, away back in days gone by, this man had been a professor of religion. She called on him, and God answered her prayers by causing the man to renounce his profanity and intemperance, and to come out clothed and in his right mind, a champion and defender of the Sunday-school.

Three years had passed, and the reputation of that school was still growing, and pupils were coming from far and near. The untiring little woman who had already accomplished so much slipped in getting out of a wagon, and the result was such that she was obliged to go to a distant city for surgical relief. She returned with her limb in a plaster cast, telling her friends and pupils that she would have to give up her school. When the news came, not only did the children and fathers and mothers implore her to stay, but the cowboys formed themselves into a committee, and volunteered to bring her in an easy wagon to and from the school, and carry her in her arm-chair, if she would only go on.

"But, dear friends," said she, "how can I teach school in all three rooms when I can not even walk from one room to another?"

"O schoolma'am! if you will only consent to stay and live with us as you have been doing we will all be so good that you won't need to walk from one room to another."

They kept their promise—at least they kept it so well that the school was continued in this way until she began to lose health from lack of exercise. But the cowboys were equal to this emergency. They procured a gentle pony for her, and a comfortable side-saddle, and outside of school hours she went around from house to house and paid visits, the people coming out to the pony to tell her how much she was needed, and that they could not have her go away.

Now, dear friends, I have given you only a part of that woman's talk on that Sunday evening. As she sat in our church, near the pastor's desk, before he had introduced her, I feel free to confess that I did not see any thing remarkable about her nor any thing particularly attractive. I could scarcely believe it possible that she was the talented woman of whom I had heard; but when she arose to speak, and her face was lighted by that Christlike spirit from within, then we began to understand the wonderful secret that had given her such success. It was the spirit of Christ that shone forth from every word and look that she gave us. Most of you, dear readers, have known something of such a town as I have described. May be some of you know places *now* where there are no schools or churches, and where there are children growing up like noxious weeds in a neglected garden. Many of you have seen the beneficial changes that have been brought about by schools and Christian churches. Let us consider the effect that shall go on down the ages as a result of this one mission teacher's work. At first she was paid no salary. If I am correctly informed, the Christian people of the State of Ohio paid her salary for several years. As the school progressed, however, the people of the town contributed more or less toward her support. One of the Mormon elders gave \$100, even though her teaching was in direct opposition to his own creed. I hardly need tell you that the result of that work was the building of a church. After the Sunday-school was well

started she found pupils in her day school capable of taking classes; and one of these pupils, a young lady, has since risen to prominence. The beneficial results that went out to the world from that little school with its poor appliances and surroundings, who can measure them?

Very likely the incident I have given you is a remarkable one. I judge so from the fact that Miss Dox was afterward employed in *starting* schools in other localities. These schools were then handed over to some teacher who could do very well after things were set going, and then she was moved about from place to place. At present she is employed to solicit funds for the Whitman College, at Walla Walla, Wash., an institution in memory of Marcus Whitman, the founder of the great Northwest country.

And now, friends, as I close can you not unite with me in finding a world of beauty and truth in that little text, that *I* have never understood or appreciated before? "I am come that they might have life, and that they might have it more abundantly."

Health Notes.

SANITARY ARRANGEMENTS OF THE HOME.

This matter has been pretty thoroughly discussed through our agricultural and home papers, in regard to out-buildings for the average country or village home; and perhaps the best arrangement, generally speaking, is the dry-dust closet or some of its modifications. Many people, however, are having this out-building connected with the wood-house or back kitchen so that the children and women are not obliged to go outdoors in winter and during stormy weather, to get to the closet; and where the average man wants to economize his time as much as possible, it is quite desirable that the closet should be so he can go out without putting on rubbers and overcoat, or run the risk of taking cold by going out without protection. All these things are being carefully studied and experimented on. The dry-dust arrangement requires a good deal of care, and it is a rather hard matter to find anybody who wants the job of keeping it in good running order, even if well paid for so doing. Some sort of *automatic* arrangement seems desirable. In towns and cities the simplest and safest thing is, without doubt, the water-closet. These can usually be put in at small expense wherever there is village waterworks; and of late many people are deciding that it pays to have cheap waterworks of their own. A windmill and elevated tank does the business perfectly; and where there are not too many people residing under one roof, a tank in the attic, in which the cistern water runs from the roof, answers every purpose. Your building must be strong enough to hold the tank or cistern safely, even when full of water, and the outlet must be so constructed that, when the tank is full, the water will go off through the conductors just as if there were no tank, and go down below into the underground cistern. This arrangement must be so that there is no possibility of its freezing up in winter so as to flood the rooms below. In fact, the tank in the attic should stand inside of a shallow pan made of galvanized iron, so that, if it ever runs over, this pan will catch the water and carry it safely outside of the building. Ernest, Mr. Calvert, and myself all have such tanks in the attics of our respective homes. I hardly need to suggest to you how much it is worth to have rain water or soft water so that the mother is not obliged

to even work a pump-handle. Just turn a faucet and you have water to fill the reservoir, tubs, wash boilers, bath-tub, or any thing else.

Speaking of the bath-tub reminds me that you can easily have both hot and cold water by having a pipe leading from the attic to the reservoir on the cook-stove, or, if you have a furnace in the cellar, have a coil of pipe in the furnace. With the latter arrangement you can have hot-water *radiators* in your home. But just now we are going to discuss the water-closet only.

At different times in these pages I have spoken of a plan for disposing of slops and sewage, and I will repeat it briefly. Every home or every house should be raised up sufficiently so that, when properly graded, the ground will descend as you go away from the house. If you can not have this arrangement on *all* sides, have it at least on *one* side. If you have an orchard, say a hundred feet away from the house, on a little slope of ground, you are lucky. Now you want to lay some large tiling from the house clear down through the orchard.* The length of this line of tiling depends upon the number of people in your home. It had better be at least a hundred feet long. At the lower end, down in the orchard, lay the largest tile you can get in your neighborhood—say 8, 10, or 12 inch—the latter size if your family is large. Get the cheapest kind of cul tile. Those warped or fire-cracked in burning are just what you want. Lay this further end of large tiles down in the ground two or three feet deep; then take them on a gradual incline up to the house. As you get near the building, use smaller tile until you get down to, say, four-inch. When you get within a rod or two of the building, in place of the tile use sewer-pipe, and have the joints cemented. This four-inch sewer pipe is to be connected with your water-closet; but before you take it into the house, put in a piece with a branch, or what is called a T, and from this T run a tin or galvanized-iron pipe clear up above the eaves of your house. This is the outside ventilator, and must never be omitted. It takes all the sewer-gas clear up above the building, and no fermentation in the hottest weather can ever produce any pressure so as to force the gas into the house while this ventilating-pipe is securely attached to the highest end of your sewage-tiling. The apparatus for flushing the closet with the earthenware bowl, etc., can be purchased in any of our large cities at an expense of from \$5.00 to \$10.00—say \$15.00 for something very elaborate and handsome.

Now, just one thing more comes within the province of my talk on this subject; and it is,

*I have directed that this large tiling with loose open joints shall go down through your orchard in order that the roots of the apple-trees may go through into the tiles to help themselves, not only to the water which comes down every day, but to use up the other fertilizing matter as well. In the course of time I presume that even these large-sized tiles will become filled with the accumulation of solid matter. But even if it does you can afford to do one of three things: Lay a new line of tile between two other rows of apple-trees, or, second, take up the old one, clear out the tiles, and put them back again. The third way is to extend the line of tile. Dig a trench below the open end, and by running in a very large quantity of water above you can easily wash out the whole contents into the trench below. Put some more tiles in the trench, fill it up, and it will run for another series of years. We have now used a similar arrangement for several years, and it works perfectly, and I have several times found great masses of roots filling these tiles when, for some reason or other, we had to dig up a portion of them. If you have not an orchard or apple-trees, by all means plan so as to raise crops (any sort of garden stuff) of some sort so as to utilize this valuable accumulation of fertility.

perhaps, the most important of all. With our modern water closets you will find in the earthen bowl, just underneath the upper edge, a ventilating-tube made in the piece of earthenware. This ventilating-tube is about two inches in diameter. A tube of tin or galvanized iron is to be attached to this, and carried gradually upward until it can enter the chimney of your cook-stove, or any chimney where there is pretty sure to be fire most of the time. This will make draft or "pull" enough on this ventilating-tube to take every bit of foul air directly to the chimney before it can rise into the bath-room or whatever room your water-closet is located in. With the assistance of my young friend Harold, whom I have before mentioned, I have just finished putting two of these water-closets in our own home. One is in the bath-room, the other in the basement. You can tell when your ventilating pipes work all right by throwing a piece of burning paper into the closet. If the smoke from the paper rushes up through the ventilating tube, the closet is all right. Ours works so well that we have never noticed even the faintest smell, even while the apparatus is being used. Our bath-room is warmed by a coil of hot-water pipes so that, when any of the family have to get up in the night, they need not rush outdoors half-dressed, and stay out till they take cold; and when I am reading my evening papers in a warm room I do not need to hunt up fur cap, overcoat, and overshoes because it is rainy, snowy, or sleety outdoors. In fact, I can take my book or paper with me into the closet, and read there if I choose.

One thing more: Quite a few people, as I happen to know, are very much benefited in health by the use of hot-water injections. With the water-closet it is a very easy matter to make the bowels move thoroughly before you go to bed. Permit me to say that I used to be very much troubled with nightmare. If I did not have that I was often more or less disturbed in my sleep by a certain sort of uneasy feeling that is banished entirely if I use the hot-water enema thoroughly just before going to bed. I know some of you may say that, with these warm dwellings, water-closets, bath room, etc., we get to be feeble and effeminate, etc. I think this is a mistake. I have not had even a slight cold for almost a year. I keep from taking cold by being well clothed when outdoors during severe weather; and I take my outdoor exercise riding the wheel or by being engaged in some profitable outdoor business. Now, is not this very much better than going outdoors without wrapping because of being in a hurry? Permit me to say that Mrs. Root and I prefer a cold sleeping-room. In fact, four windows are raised more or less almost every night in the year. These four windows and one door, which opens into another room, furnish us ventilation for our sleeping-room:

A DOCTOR ADVISES ABOUT EATING, ETC.

Friend Root:—As I am about your own age, 56 years past, and having been a dyspeptic, I will venture a little advice in regard to diet, etc. Eat slowly and masticate thoroughly. Never bolt your food. Do not confine yourself too long to one or two articles of diet. Eat substantial food, thoroughly cooked, and always enough to furnish strength for six hours. The stomach needs rest as well as brain and muscle. Never drink after meals short of four or five hours, if possible to avoid it. Better suffer a little for water than to spew. Let your drinking be a short time before and very little during meals, never after you are through, as diluted gastric juice does not readily dissolve the ingesta; and if digestion is much delayed, fermentation is sure to set in. Remember your milk toast. Thorough mastication and insalivation is very important to a

dyspeptic. The saliva, being alkaline, prevents fermentation until neutralized by the gastric acid. If you dilute the gastric juice by after-drinking, the ingested substance will float (so to speak) in the superabundant liquid, thus readily bringing the gastric acid in contact with the salivary alkali, thereby prematurely neutralizing it. The gastric juice acts only on the outside of the mass of food, dissolving the external portions, neutralizing the alkali as it slowly penetrates and dissolves away the portion next to the walls of the stomach. The salivary fluid, being uniformly mixed through the mass, prevents fermentation until digestion is completed. The acids of digestion are not the acid of dyspeptic fermentation; and, although there may be an abundance of gastric juice secreted to perfect digestion, if it is too much diluted with other liquid it will not fulfill its purpose; then woe betide the dyspeptic!

When pyrosis follows eating, and the eructated or vomited fluid is acid, a browned soda cracker or two should be eaten without any fluid, which will usually allay the vomiting and burning sensation in the stomach. Sometimes the stomach rejects the superabundant fluid with more or less of the more solid ingesta before fermentation has time to supervene, causing little or no pain or sickish feeling.

Recapitulation: Eat slowly plain substantial food, chewing it thoroughly. If a person eats slowly, and chews his food thoroughly, he will not often eat more than his stomach will digest, unless he eats to please his eyes or fancy and not his appetite. Avoid much liquid during meals, and none after eating, for four or five hours. Avoid much pastries. *Praise God; forget yourself, and be happy.*
 S. Dove, Cal., Nov. 7. E. S. ARWINE.

I quite agree with you, friend A., unless it is in the matter of waiting so long after meals before taking any liquid. Dr. Salisbury (and my own experience) seems to indicate that hot water or other liquid should be taken about an hour and a half *before* a meal as well as two and a half and three hours *after*. If you put it four or five hours, you would force us on to the two-meal a day regimen as recommended and practiced by the Battle Creek people; and if I could have constant outdoor exercise I think I could do pretty well on two meals a day.



APPLE-TREE BORERS; WHAT SHALL WE DO WITH THEM?

Many remedies have been proposed in place of digging out the culprits with a wire, as I have recommended; and quite a few have felt sure that coal ashes, or ashes from wood heaped up around the base of the trunk, will keep the borers away. I hardly think this can be true, for we have taken coal ashes from our boilers ever since our orchard was planted, and put them around our fruit-trees, all the way from a shovelful to a wheelbarrow-load about each tree. As our coal ashes contain more or less wood ashes also, we have received some benefit from the potash in the latter; but so far as borers are concerned, I could not see that the ashes were any hindrance. So many have felt sure, however, that the ashes were of benefit, I thought best to submit the matter to Prof. Green, of our experiment station. Here is his reply:

Mr. Root:—I have not tried the remedy named in the letter which you sent me, but have known of its being tried. It is not a sure remedy, and some think it is of no value whatever. The eggs of the borers are laid just at the surface of the ground, and there is nothing about ashes of any kind to prevent the deposit of the eggs nor their hatching.

If the ashes are heaped up around the trees the borers will simply enter higher up, and soil will have the same effect as ashes. I am quite sure that there is nothing in the remedy.


Wooster, O., Nov. 17.

W. J. GREEN.

I may add that I have been carefully scanning our agricultural periodicals for several years back, and have also carefully noted what our great teachers in horticulture have to say in regard to the matter; but, if I am correct, there is at the present time nothing known that will kill the borers that will not at the same time endanger the life of the tree. The only thing that can be recommended is the laborious method of getting down on your knees and removing the soil from around the roots of the tree and digging out the offenders with a sharp pointed knife and an assortment of slender wires. The reason why so many people make a mistake is along the line of faith in medicines for human ailments. All these troubles come by fits and starts. Sometimes they go away and stay away for years when you do not do anything. Again, when every thing is favorable they will get a going and ruin your orchard almost in spite of every thing you can do. I presume the fruit-growers of the world could afford to pay thousands of dollars for some easier and cheaper way than digging the borers out, if such a way could be found.

MILLS' EARLIEST IN THE WORLD TOMATO.

Our good friend Greiner, after referring to what I said about this tomato on page 655, Sept. 1, writes in *Farm and Fireside* as follows:

Now, a year or two ago I tried this Mill's wonder (with Fordhook and a large number of others) and failed to find any thing remarkable about it. Possibly I was disgusted with it from the very start by the extravagant claims made for its earliness; besides, I had only a few plants, simply because I lacked faith from the beginning. After this experience, however, I would have taken Mr. Rot's words, with a large dose of salt, if I had not just received an endorsement from an unexpected quarter. A brother of mine writes me that he has grown this Earliest in the World tomato this season, and finds it so good that he advises me to throw all others away. A neighbor also has had it for three years, and this year has a fine patch of plants, all trained to single stalk on stake, and doing remarkably well. While I am not going to abandon all other varieties for this new phenomenon, I think I shall have to give it another and more thorough trial. If it proves all that these men now say it is, we will even forgive Mr. Mills for having burdened his new tomato with a name long enough and heavy enough to drag it down. We shall call it simply Mills. 

A few days ago we were favored with a visit from two of the members of the Lakeshore Canning Co., Conneaut, O. They were in search of a small-sized good shaped tomato that could be canned whole. I told them that Mill's Earliest would fill the bill exactly. The tomatoes never grow very large, but they are, with scarcely an exception, of beautiful shape, and perfectly smooth, and they are produced in enormous quantities. Were it not for its small size I should call it one of the most productive we have. One thing that surprised me was that, although we must have had 30 or 40 plants, there seemed to be no sporting. Each plant produced great numbers of beautiful tomatoes, just like its neighbor, all of a size, and all exactly alike.

HOW TO PLANT STRAWBERRIES AT ANY TIME
DURING THE FALL AND WINTER WHEN THE
GROUND IS NOT FROZEN, AND HAVE
THEM LIVE.

A. I. R. says in Gardening for November, you can also set out strawberry-plants, etc. Will he please give "the trick" in next issue?

North Middletown, Ky.

A. DETTWILLER.

Friend D., this, like a great many other things, must be learned, even after you have been told how it may be done. A strawberry-plant in our climate can not very well take root in new soil in the month of November or later; therefore we must take a lump of dirt with the plant. Do this with any of the transplanters I have described. Put them in good rich soil; and if there should be enough warm weather so they make some growth they will probably stand all right. If this warm weather does not occur, the ground must be thoroughly mulched. Besides this mulching, as freezing weather comes on, enough loose straw should be put over the plants themselves so you can just get a glimpse of the foliage down through the straw. When this is properly done there is not very much danger of the frost throwing them out. This mulching must be gradually taken off in the spring. If a severe spell should occur so as to freeze the ground hard after your mulching has been partly removed, it may be necessary to put it back again. Let me add that, when the plant is taken up with the transplanter, the ground should be most thoroughly soaked after it is put where it is to grow. With the bottomless tin tubes I have described so many times, we are obliged to soak the ball of earth around the plant until it is *soft mud*, in order to have it slip out of the tube. This thorough soaking seems to insure the plant a successful catch to the new soil. In fact, the plants won't take hold so late in the fall without it. Try a few plants first. When you have succeeded, try a few more. Some varieties of strawberries are much easier to succeed with than others. Our late plantings of the new Marshall, for instance, have been almost all failures. Where you are growing strawberries under glass, of course mulching will not be needed; and you can put them out and make them grow at any time in the winter when the weather is mild enough to remove the sashes and work in the open air.

FRAUDS IN SMALL FRUITS.

I think GLEANINGS to me is worth all it costs, in exposing frauds, to say nothing of all the valuable information on apiculture. In reading about the Rocky Mountain cherry, from the description I think it only the wild sand cherry growing here in the sand hills of Nebraska. Some eat them, but they are too bitter for any use for me. The Crandall tree currant is only the wild black currant growing in the canyon here, very little better than the cherry—another fake to deceive people. "The Buffalo berry" is some better; but you can get thousands growing on the north side of the bluffs. All of the above trees and shrubs are "blowed up" just to deceive the people and get their money. I think the law of the United States should be that all fruits of new origin should be registered.

Very few bee-keepers in my neighborhood, and they manage poorly, hence say poor seasons. I started with 3 colonies, have increased to 12, and think about 30 lbs. surplus. Have run for increase only. This I think would be a fair season.

Miller, Neb.

P. L. ANDERSON.

FROM THE MICHIGAN POTATO REGIONS.

Potatoes are selling from 11 to 13 cts. here now; but I was lucky enough to get from 17 to 25 cts. for 1050 bushels. The rest I have in the cellar. There are hundreds of carloads in this country, as potatoes and "bagas" are a great crop here, and we have good potato land, mostly sand. We have 400 bushels of Rural New-Yorkers; they are fine. The rest are Green Mountain.

Orion, Mich., Nov. 7.

J. J. THURSTIN.

30 LBS. OF POTATOES FROM 1 LB. PLANTED, SECOND-CROP THOROUGHbred IN MICHIGAN.

Friend A. I. Root:—I got one pound of Maule's Thoroughbred potatoes (second crop) of you in June. I exposed them to the sun 8 days. They